DEPARTMENTS AND PROGRAMS

Department of Africana Studies

Janie Ward, *Chair and Professor*
Theresa Perry, *Professor*
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The intellectual domain of Africana Studies (AST) consists of four major areas:

1. The study of African and European American relationships beginning in the 16th century.
2. The study of African/African American community building, i.e., African Americans' founding and organization of economic, educational, religious, and cultural institutions and related achievements of self-determination.
3. Africanity and diaspora studies in the Americas, Africa, and Europe.
4. Africana women's studies, which seeks to study race, gender, and culture in ways that allow us to understand often interrelated diasporic experiences across the globe.

Each of these areas may be examined further by focusing upon specializations in the humanities (e.g., literature, film, journalism), social sciences (e.g., research, public policy, health care), physical sciences (e.g., environmental studies), or interdisciplinary studies (e.g., women's and gender studies, management, education). An AST major or minor is appropriate for students with strong interests in studies of Americans of color, in the study of race, gender, and class in the humanities or social sciences, or in one or more subject areas indicated above. The department prepares students for the labor market and continued professional and graduate training by providing a solid knowledge foundation of critical, analytical, and technological skills. Pre-graduation internships are available for all interested students. Study abroad and modern language skills are highly recommended. Students interested in dual degree programs or self-designed majors should consult with department faculty to design an individualized program.

Major in Africana Studies

This course of study is for students who want to pursue a liberal arts major in Africana studies. Students who anticipate professional careers or graduate study in liberal arts should consider this major track. The major requires 36 semester hours comprising the following:

AST 101	Introduction to Africana Studies
AST 102	Black Cultures in U.S. Society
AST 240	African American Intellectual and Political History

- Eight semester hours contributing to an interdisciplinary knowledge of Africana studies, no more than four hours of which may be taken in any one department. Courses that count toward the satisfaction of this requirement include:

AST/ WGST 210	Sisters of the African Diaspora
AST/ SOCI 249	Inequality: Race, Class, and Gender in Comparative Settings
AST 275	Soul, Funk, and Civil Rights
AST 300	Seminar in Selected Topics in Africana Studies
AST 313	The Black Struggle for Schooling in the United States
AST/SOCI/ WGST 365	Intimate Family Violence: A Multicultural Perspective
AST 388	Black Popular Culture and the Education of Black Youth
ENGL 163	African Influences in American Literature and Culture
ENGL 176	African American Fiction
ENGL 275	American Modernism and the Harlem Renaissance
POLS 215	The Politics of Exclusion
POLS 242	African Politics

- Eight semester hours of electives. Courses listed under the "interdisciplinary knowledge" requirement may count as electives only if they are not counted toward the satisfaction of the "interdisciplinary knowledge" requirement.

Other electives are:

ART 251	African Art: 3000 BC to the Present
ART 255	African American Art
ENGL 220	African American Autobiographies
HIST 210	The African American Experience from Colonial Times to Reconstruction
HIST 213	Race and Ethnicity in U.S. History
POLS 211	The Politics of Cities

- Eight semester hours from AST 350, AST 355, or AST 370.

Any AST course numbered 350 and above will satisfy half of the College's Independent Learning requirement. Two such courses will satisfy the entire Independent Learning requirement. Students may also satisfy the College's Independent Learning requirement by taking appropriate courses or completing approved projects in an area other than Africana Studies.

Minor in Africana Studies

The AST minor requires AST 355 or AST 300, AST 101, AST 102, or AST 240, and three additional courses at the 200 or 300 level.

Minor in Social Justice

See description and courses in the Department of Women's and Gender Studies.

Africana studies majors who choose to complete a minor in social justice may only count one of the following required social justice core courses as an elective in Africana studies:

SJ 220	Working for Sotcial Justice
SJ 222	Organizing for Social Change
SJ 380	Integrative Capstone Project

Departmental Honors

Departmental honors is offered to eligible students according to the College requirements on page 23. Majors with a minimum 3.30 cumulative grade point average and a 3.67 grade point average within the Department of Africana Studies are eligible for the departmental honors.

COURSES

AST 101 Introduction to Africana Studies (M5) (F)
4 sem. hrs.
Considers the histories and cultures of people and societies of the African diaspora with particular emphasis on the United States and the Caribbean. Students will gain an understanding of the experiences of black people around the world and develop the critical thinking skills to interpret those experiences across interdisciplinary perspectives. Ward.

AST 102 Black Cultures in U.S. Society (F-1)
4 sem. hrs.
Black communities today are more diverse than ever as they include African Africans, African-descended people from the West Indies and elsewhere, and people from various African nations. This course will review key historical events, social movements, legal decisions, and migratory patterns from post-civil war to the present that serve to shape the national, regional, and historical contexts in which black people reside and the cultures produce. Topics include identity development, educational achievement, intellectual traditions, institutional development, cultural productions, black migrations, and current issues as they arise. Ward.

AST/WGST 210 Sisters of the African Diaspora (F-1)
4 sem. hrs.
An interdisciplinary lens is used to examine Black women's experiences with sexism, colorism, domesticity, sexuality, immigration, body politics, and violence. Black women from the African Diaspora (Cape Verdean, Caribbean, Afro Latina, and Black American) show how their experiences transcend national and societal boundaries, challenging common assumptions of black womanhood. Thomas.

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AST/SOCI/WST 232 Race, Gender and Health (M5) (F-1)
4 sem. hrs.
Examines the unique perspective of healthcare from the cultural lens appropriate to women of color. Historical, social, environmental, and political factors that contribute to racial and gender disparities in healthcare are analyzed. Students will develop cultural competency tools for more effective healthcare delivery. Thomas.

[AST 240 African American Intellectual and Political History (M5)
4 sem. hrs. Not offered in 2014-2016.]
Examines the intellectual and political discourse of African Americans from the 19th century to the present. Topics include the political debates of DuBois–Washington and King–Malcolm X, analysis of past/present lynching's and church burnings in the South, the philosophical foundations of cultural pluralism, Black nationalism, and contemporary multiculturalism, the criticism of Black feminism/womanism and Black sexual politics, and recent disputes between neoconservatives and their critics.Thomas.

[AST/SOCI 249 Inequality: Race, Class, and Gender in Comparative Settings
4 sem. hrs. Prereq.: SOCI 101 or consent of the instructor. Not offered in 2014-2016.]
Examines the historical origins of oppression in the United States by exploring how slavery, colonialism, and immigration have differentially shaped various groups' access to power. Explores contemporary struggles in South Africa. Examines impediments to the notion of the United States as a "mecca for diversity," including critical explorations of how injustices manifest themselves in the economy, education, the family, the arts, the media, and other key institutions. Thompson.

[AST 269 African Survivals and the Study of the Garifuna People of Belize (TC)
4 sem. hrs. Not offered in 2014-2016.]
Studies the history, culture, and language diversity of Belize with focus on the Garifuna people, descendents of Carib Indians and escaped Black African slaves. Examines migration patterns, religious practices, and musical traditions of the Garifuna. Travel in Belize includes a school-based community project in a Garifuna community, and trips to museums, a Mayan ruin, the rain forest and a butterfly breeding ranch. Ward.

AST 275 Soul, Funk, and Civil Rights (F-2)
4 sem. hrs.
Elements of black creative expression provide the backdrop and the timeline for our interrogation of the social movements, racial politics, and ultimate remaking of U.S. culture in the 1960s and 70s. Major topics to be covered include the Black Liberation Movements (i.e. the Civil Rights and the Black Power Movements), the emergence of racial consciousness and its impact on film and TV, the Black Arts Movement, and the emerging voices of black feminist thought. The unforgettable music produced and consumed by African Americans (and others) in that time period (R & B, soul, funk, and disco) expands our understanding of U.S. history, philosophy, literature, politics, and the arts today. Ward.

AST 300 Seminar in Selected Topics in Africana Studies (F-1)
4 sem. hrs.
Offers an intensive study of a selected topic in Africana studies. Staff.

[AST/SOCI 311 Critical Race Legal Theory
4 sem. hrs. Prereq.: AST 101, PHIL 226, AST/SOCI 249, or consent of the instructor. Not offered in 2014-2016.]
Chronicles critical race theory as an intellectual field created in dialogue with dominant race and legal constructions since the civil rights movement in the U.S. Gives particular attention to key contemporary legal and political debates about affirmative action, assaultive speech, land rights, the punishment industry, violence against women, and multicultural education.Thompson.

[AST 313 the Black Struggle for Schooling in the United States
4 sem. hrs. Not offered in 20114-2016.]
Examines African Americans' struggle for the right to an education in the United States, focusing on the content (historical and sociopolitical) of specific struggles. Selected topics include: the pursuit of literacy by enslaved Africans, the ex-slave's campaign for universal education in the South African American literary societies, African American education in the Jim Crow South, Black education in the post-civil rights era, and African Americans' struggle for the right to maintain their language. Perry.

AST 329 Race, Culture, Identity, and Achievement (S-1)
4 sem. hrs.
Examines historical, theoretica, and empirical studies to understand, explain, predict, and intervene in the school performance of students of color in the United States. Studies variables affecting the school performance of African Americans, West Indian Immigrants, Chinese Americans, Vietnamese Americans, Puerto Ricans, and Mexican Americans. Examines educational practices and institutional and cultural formations that promote school achievement among Black and Latino students. Perry.

AST 336 Black Narratives of Oppression, Resistance, and Resiliency (S-1)
4 sem. hrs.
Using Black narratives as data, students will examine how Black people have experienced, interpreted, and resisted racial oppression in the United States. Attention will be given to variables (individuals, institutional, and cultural formations) that have contributed to the development of resiliency in a people. We will also consider the ways in which racial oppression leaves its mark on members of oppressed and oppressor classes. In discussing the narratives, we will draw on scholarship from the fields of history, anthropology, sociology, and social psychology. Perry.

AST 349 Directed Study (F, S)
4 sem. hrs. Prereq.: Consent of the instructor.
Supervised by a member of the department. Directed study addresses coursework required for the major or degree not being offered formally that semester. Students work under the close supervision of a faculty member. Consent is required for a directed study, which does not count toward the independent learning requirement. Staff.

AST 350 Independent Study (F, S)
4 sem. hrs. Prereq.: Consent of the instructor.

AST 355 Senior Thesis (F, S)
8 sem. hrs. Prereq.: Consent of the instructor.
Staff.

AST/SOCI/WGST 365 Intimate Family Violence: A Multicultural Perspective (S-1)
4 sem. hrs. Prereq: One of the four 100-level WGST courses, AST 101, or SOCI 101, and junior standing or consent of the instructor.
Examines the scope and variety of violence in the family from an interdisciplinary perspective that includes: (a) a theoretical framework of economics, law, public policy, psychology, and sociology, (b) a cross-cultural understanding of family violence against girls and women, and (c) an exploration of the sociopolitical, legal, and cultural response to family violence. Discussion of the theories used to describe and research family violence that includes: violence against women, children, intimate partners, and elderly family members.Thomas.

AST 370 Internship (F, S)
4–8 sem. hrs. Prereq.: Consent of the AST chair
In collaboration with the Career Education Center and under supervision by a department faculty member, students intern for 10 to 15 hours per week (for four credits) in workplace sites connected to their major. Staff.

AST 388 Black Popular Culture and the Education of Black Youth (F-1)
4 sem. hrs.
Students explore black popular culture produced and consumed by Black youth, examining how these works draw on African American historical, cultural and linguistic practices. Can Black popular culture be resistant, subversive and contribute to social change? Can these works critically inform the education of Black youth? Course materials draws on scholarship from the fields of education, sociology, African American studies, media studies, and linguistics. Perry.

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Department of Art and Music

Margaret Hanni, *Chair and Associate Professor*
Gregory Slowik, *Professor*
Colleen Kiely, *Associate Professor*
Heather Hole, *Assistant Professor*
Edie Bresler, *Senior Lecturer*
Bridget Lynch, *Senior Lecturer*
Danica Buckley, *Music Director of Simmons College Concert Choir*
Marcia Lomedico, *Administrative Assistant*

Additional Teaching Faculty
Kimberlee Cloutier-Blazzard
Michelle Grohe
Frances Hamilton
Randi Hopkins
Jaclyn Kain
Timothy Orwig
Helen Popinchalk
Guhapriya Ranganathan
Masha Ryskin

- The Department of Art and Music offers three majors: art, music, and an interdepartmental major in arts administration, as well as four minors: art, photography, arts administration, and music.
- The Department has the following residency requirement: normally, students majoring in art or music take all courses required for the major within the department of Art and Music. Transfer students must complete a minimum of 16 credit hours within the department.
- Students who pursue a double major or combine a major and a minor **within the department** may not double-count courses.
- Students may not take required courses or required electives for their major pass/fail. In order to pass, students must earn at least a C- in pass/fail courses in the Department of Art and Music.

Department Learning Goals

I. ***Develop visual or aural literacy.***
Students will:

- Identify and utilize significant practices and processes of art or music.
- Understand artistic and musical terminology, critical methods, and historical contexts to analyze, criticize, and interpret visual and musical texts.
- Apply their knowledge in effective oral and written presentations.

II. Develop and apply skills learned in an art or music practice course to create original works of art or music.
Students will:

- Demonstrate the technical skills and the ability to organize the visual or musical elements necessary to communicate concepts and experiences.
- Produce creative works that demonstrate innovation in concepts, formal language, and/or materials.

III. Articulate that the study of art or music involves the mind, spirit, and senses.
Students will:

- Articulate, orally and in writing, the cultural and institutional purposes — historical and contemporary — for the creation of art and music.
- Engage in sophisticated oral or written communication and critical discussions in which students argue and defend ideas and offer new perspectives.
- Recognize and analyze the significance of cultural diversity in the creation of art and/or music.

IV. Apply classroom theory and practice to experiential learning within Boston's cultural institutions and creative community.
Students will:

- Understand the role and value of cultural institutions in society.
- Recognize the roles and responsibilities of professionals in cultural institutions.

- Apply professional values and ethics in classes and internships.

Art and Music Departmental Honors

- Students must have a 3.5 GPA to apply.
- A thesis-quality research paper or an independent study project in art or music would be eligible.
- Students submit a written proposal to the faculty supervisor with whom she would like to work and then to the department for approval.
- Project must be proposed and approved by April 15 for completion in the following fall semester or by October 30th for spring semester completion.
- The student must receive an A grade from the professor for the project in order to be awarded Departmental Honors.

ART

Courses in art are designed to strengthen students' visual literacy, to help them develop a broad knowledge base, and to hone key creative and communication skills necessary to their professional success. Studio courses focus on the direct practice of art making and visual analysis, encouraging students both in their creative thinking and technical proficiency. Through art history, students explore the cultural, political, and social contexts in which art has been produced and displayed, and expand their writing and analytic skills. Arts administration courses engage students with contemporary issues and institutions in the cultural community, and build critical, writing and organizational abilities. Art courses complement other disciplines in the humanities, such as history, English, philosophy, and communications. Art majors are strongly urged to include these and other areas in their programs of study and many complete a double major.

Major in Art

The major in art includes courses in art history and studio art practice. Students choose either area to emphasize, depending upon interest and career plans. Either emphasis can serve as a foundation for further study at the graduate level in art history or practice. The study of art leads to careers in a wide variety of fields, such as teaching, publishing, arts administration, museum or gallery work, commercial art and design, architecture, city planning, painting, photography, or printmaking, etc. In all of these areas, the major in art would profitably be combined with a major in another area, such as English, history, philosophy, management, communications, or mathematics. Each student is encouraged to augment the required courses with in-depth study in the liberal arts and additional courses in the major; each student works with her advisor to develop a coherent course program that will meet her educational goals.

Requirements: Students are required to take 28 semester hours in art, exclusive of the independent learning requirements. Students will choose an emphasis in art history or art studio.

Art History Track

There is no strict sequence in which art history courses must be taken, although the introductory courses ART 141 and 142 are normally taken first.

The required courses are:

- Five courses in art history. ART 100 is not accepted for the major.
- Two courses in art practice. The independent learning requirement may be taken in art or another field.

Studio Art Track

- Students must take five courses in studio art and two courses in art history.
- Students must take at least one of the following studio art courses: ART 111, ART 112, ART 138, and/or ART 139.
- Students must take one 200 or 300 level course.
- The remaining three studio courses are electives.
- One of the two art history courses must be ART 154 OR ART 244; the other course is an elective. ART 100 is not accepted for the major.
- The independent learning requirement may be taken in art or another field.

Minors in Art

The Department of Art and Music offers four minors in art as listed below. For transfer students, minimum of eight semester hours must be taken within the department to complete a minor in art, arts administration, or photography.

Minor in Art

An art minor may emphasize either studio art or art history:

- Art History: Students must take four art history courses and one of the following studio art courses: ART 111, ART 112, ART 138, or ART 139.
- Studio Art: Students must take four studio art courses, one of which must be ART 111, ART 112, ART 138, and/or ART 139 plus one art history course.
- ART 100 is accepted for the art minor

Minor in Arts Administration

See page 59.

Minor in Photography

A minor in photography requires five courses from the following:

- ART/COMM 138 and/or 139
- Two or three from the following: ART/COMM 232, 237, 239, 256, 230.
- Either ART 249 or ART 154

Minor in Music

A minor in music consists of four music history/theory courses and one elective in music history, theory, or performance. Normally, at least two courses must be at the 200 level or above. A minimum of twelve semester hours must be taken within the department to complete a minor in music.

COURSES

Art Studio Courses

ART 111 Draw What You See (M1) (F, S)
4 sem. hrs.
Drawing requires developing awareness of how and what you see - perceptually, personally and culturally. In this introductory course, students develop formal/technical skills, learn to use various wet and dry media and drawing processes, and stretch the imagination while exploring the complexity of vision. Requires no previous studio experience. Kiely, Lynch, Hamilton.

ART 112 Color Studio (M1) (F, S)
4 sem. hrs.
This introductory studio course immerses you in the evocative and complex world of color and its applications in art, design, and culture. Students learn color theory and develop technical, perceptual, and conceptual skills through hands-on weekly assignments, both formal and experimental. Working in paint and mixed media, you will explore the interdependent relationship between color and issues of visual communication. Requires no previous experience, although ART 111 is strongly encouraged. Kiely, Lynch, Ranganathan.

ART 117 Printmaking (M1) (F)
4 sem. hrs.
Presents a variety of basic printmaking processes including wood block, drypoint etching, stenciling, embossing, and monotypes. These techniques will be used to explore the transformation of drawings, designs, and ideas into prints. Popinchalk.

ART 119 Sculpture (M1) (F)
4 sem. hrs.
Introduces students to hands-on experience with the design and creation of small abstract and representational sculpture. Explores a broad range of natural and manufactured materials (such as found and neglected objects, cardboard, wire, and plaster) to create mobiles, wall hangings, reliefs, and freestanding sculptures. Requires no previous studio experience. Lynch, Bresler.

ART 121 Artist's Books (M1) (S)
4 sem. hrs.
Introduces creative bookmaking as a form of visual expression. Addresses the book as an art object. Students will be introduced to several ways of making books, unique construction, and basic hand-printing methods. Emphasizes thinking visually about content. Lynch.

ART/COMM 138 The Poetry of Photography (M1) (F, S)
4 sem. hrs.
Like a poem, the art photograph often uses metaphor, allusion, rhythm, and profound attention to detail. In this course students learn to create artful photographs while acquiring the skills and craft of using a 35mm camera, developing black and white film, and making gelatin silver prints in the darkroom. 35mm cameras are available for students to use for the course.
Bresler, Kain.

ART/COMM 139 Color Photography CSI (M1) (F, S)
4 sem. hrs.
Observing what's in front of you is a discipline akin to a detective solving a mystery. In this course students learn to successfully operate a digital camera (DSLR) and apply camera raw and Photoshop to produce dynamic color prints. Our goal is exercising visual and critical thinking muscles while enlivening personal vision. DSLR cameras available for students' use. Bresler.

ART 183 Life Drawing (M1) (F)
4 sem. hrs.
Offers a more animated perspective to a spatial environment than ART 111. Requires no previous studio experience and covers techniques and concepts that may overlap basic drawing. Includes work with a live model in numerous contexts and explores a broad range of media and techniques. Relates the figure to other figures, an environment, and more conceptual interpretations. Kiely, Ryskin.

ART 211 Drawing II: Contemporary Visions (S)
4 sem. hrs. Prereq.: ART 111 or ART 183 or consent of the instructor.
Find your voice in drawing! This course builds on skills developed in ART 111 or ART 183 and emphasizes drawing as a cross-media tool and a conceptual process. Students are introduced to the use of color and mixed media and experiment with approaches including the perceptual, conceptual, non-objective, narrative, and the process-driven, culminating in an independent series of related works. Kiely, Lynch.

ART 213 Painting: Observation to Expression (M1) (F)
4 sem. hrs. Students are strongly encouraged to have have taken ART 111 or ART 112.
Develop basic painting skills while exploring the expressive potential of paint. This course instructs the beginning painter in the materials and techniques of painting. Students learn various indirect and direct approaches to painting – underpainting, glazing, impasto, wet-in-wet – developing formal, perceptual and critical skills. Emphasizes color as it relates to both individual expressive concerns and pictorial structure, and introduces students to examples of historical and contemporary painting. Kiely, Lynch.

ART 215 Screen Printing (M1) (S)
4 sem. hrs. Prereq.: Students are strongly encouraged to have taken ART 111, ART 112, or ART 117.
Teaches various methods of screen printing, including paper and photo emulsion stencils, direct application of screen painting fluid, as well as screen preparation and reclamation. Students learn the operation of an exposure unit, various registration techniques, and good studio practice. Popinchalk.

ART 216 Screen Printing and Propaganda (S)
4 sem hrs.
Introduces students to the silk-screen process and to its historical roots in advertising, promotion, and propaganda. Students will learn a variety of techniques for screen printing as they study the way artists, communities, and political groups have used silkscreen to get their message across to a wide audience. Popinchalk.

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ART 222 Collage & Mixed Media (S)
4 sem. hrs. Prereq.: ONE of the following courses: ART 111, ART 112, ART 183, ART 211, ART 213 OR consent of the instructor.
Recycle and transform your raw materials into art! This course explores a variety of forms of representation from the 1950s to the present, focusing on collage and mixed media. Students work with traditional (ex: paint, drawing media) and non-traditional materials (ex: recycled and found materials) emphasizing experimentation, culminating in an independent body of work. Processes include photomontage, collage, assemblage, transfer techniques, and appropriation. Kiely.

ART/COMM 230 Special Topics in Photography
4 sem. hrs.
Focusing on a timely theme or methodology in contemporary photography, our aim is deepening students' connection with changes in the medium. Visiting artists as well as field trips to galleries and museums strengthen class investigations. Students produce a final portfolio of color or black and white prints. Themes and topics for particular semesters will be posted before registration begins. Bresler.

ART 231 Special Topics in Studio Art
4 sem. hrs. Prereq.: One 100 level course or consent of the instructor.
Offers students an opportunity for immersion and concentrated study in topical themes in studio art, resulting in an independent project. Themes and topics for particular semesters will be posted before registration begins. Kiely, Lynch.

ART 232 Advanced Digital Sandbox (S)
Prereq.: ART 139.
A playful workshop where students master cutting edge digital techniques and the craft of archival inkjet printing. We investigate a variety of artists' practices at the forefront of the evolving digital praxis, along with field trips to artist studios, galleries, and museums. Students work on long-term projects of their choosing, in color or black and white. Bresler.

ART/COMM 237 Advanced Black and White Photography (S)
4 sem. hrs. Prereq.: ART/COMM 138.
Emphasizes the making of fine art photographs with attention to the aesthetics of creating photographic images in conjunction with learning advanced exposure and printing technique. Students will work on projects to explore and deepen their ideas. Black and white photography in the traditional darkroom. Bresler.

ART/COMM 239 Art of the Real: Documentary Photography (F)
4 sem. hrs. Prereq.: ART/COMM 138 or 139.
How do you connect with honest, clear, and provocative story telling? In this class, students engage with the documentary tradition by investigating cultural, political, ideological, or personal topics of their own choosing. Along the way they are encouraged to refine their technical and aesthetic skills. Students work in digital, analog, color or black and white. Bresler.

ART/COMM 256 Approaches in Contemporary Photography (S)
4 sem. hrs. Prereq.: ART/COMM 138 or 139.
From portraits to staged narratives, appropriation to the conceptual landscape, students explore a diverse range of methods and styles. Combining discussions, with visiting artists, field trips to gallery and/or museum exhibitions, students produce a final portfolio of deeply intentional and considered photographs. Bresler.

ART 331 Special Topics in Studio Art
4 sem. hrs. Prereq.: One 200 level course or consent of the instructor.
Offers students an opportunity for immersion and advanced study in topical themes in studio art. Classes incorporate readings, trips to museums/galleries and visiting artist talks to develop critical awareness of the field. Students create a portfolio of related works as a final project. Topics or themes for a particular semester will be posted in advance of registration. Kiely, Lynch.

Art History Courses

ART 100 Objects and Ideas: A Museum History of Art (M1) (F, S)
4 sem. hrs.
Introduces the history of art based on the world-class museum collections in the Boston area. Includes slide lectures and weekly field trips to Boston-area museums and galleries, including the Museum of Fine Arts, Harvard Art Museums, the Institute of Contemporary Art, the Gardner Museum, and others. Counts towards the art minor. Lynch.

ART 141 Introduction to Art History: Egypt to The Renaissance (M1) (F-1,2)
4 sem. hrs.
Why do cultures and people make art? What does it convey about their beliefs or values and how does it do that visually? What art has survived from ancient times and why? What is the role of female and male artists and patrons in different cultures? Students become fluent in the language of visual art, explore different kinds of cultural expression and study painting, sculpture, and architecture from the Egyptian pyramids to Michelangelo's Sistine Ceiling. Includes frequent visits to the Museum of Fine Arts and the Gardner Museum. Hanni.

ART 142 Introduction to Art History: Baroque to the 20th Century (M1) (S-1,2)
4 sem. hrs.
What do we expect of art? What stories does it tell and why? How does it communicate to the viewer through purely visual means? How do we read a work of art? Students learn the language of western art from 1600 to the 20th century by studying how it looks, and the ideas and values it conveys over three centuries in Europe and the United States. Students become familiar with different periods in art, the careers of significant artists, and the historical role of women in the production and commissioning of art. Uses the collections of the Museum of Fine Arts and the Gardner Museum for class visits and discussions, as well as for individual study of the original works of art on view. Hanni.

ART 154 Contemporary Art (M1) (F-1,2)
4 sem. hrs.
Examines art from 1945 to the present with emphasis on the changing nature of the art object, role of the artist, and audience for art in the second half of the 20th century. Emphasizes primarily, but not exclusively, American art with attention to emerging awareness of feminism, multiculturalism, and postmodern critical influences. Hopkins.

[ART 174 (TC) Collecting Culture: Perspectives on Art Collections in Britain (M1)
4 sem. hrs. Not offered in 2014-2015.]
Studies significant collections of art and antiquities in museums, galleries, and country houses in and around London, how they were formed, and their relationship to changing social and political contexts in Britain. Topics include classical and Assyrian art at the British Museum in relationship to empire building in 18th- and 19th-century England, portraiture as a document of changing aristocratic ideals and national identity, and the Victoria and Albert Museum as an example of social reform. Hanni.

ART 210 Architecture of Boston (F)
4 sem. hrs.
Uses Boston and Cambridge to explore the history and theory of modern and pre-modern American and European architecture. Considers such landmarks as Richardson's revivalist Trinity Church, Pei's international-style Hancock Tower, and Le Corbusier's sculptural Carpenter Center within the wider context of significant development. Lectures and museum and site visits required, as well as walking tours exploring Boston as architecture and urban design. Orwig.

ART/EDUC 205 Thinking Through Art (F)
4 sem. hrs.
Examines how viewers and students acquire critical thinking skills through their observations and group discussions of art and studies student-centered learning and the inquiry method of teaching. Students will gain experience in facilitating discussion about works of art based on the Visual Thinking Strategies method developed by a Harvard psychologist and a museum educator. Students will study the theoretical underpinnings to VTS and will acquire practical experience in using the method. Group work, classroom observation, guest speakers, and visits to the Gardner Museum and Museum of Fine Arts are included in the work for this course. No experience in art or art history is necessary. Grohe.

ART 241 Special Topics in Art History
4 sem. hrs.
Provides in-depth study of a geographical area, historic period, or particular theme. Uses seminar format to equip students with increased facility in visual analysis, art history research methods, individual research, bibliographic study, and critical evaluation. Topics for particular semesters will be posted in advance of registration. Hanni, Hole.

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ART 243 Art in Europe: Romanticism, Impressionism, Expressionism (F)
4 sem. hrs.
Students explore the social and political contexts that underpin tremendous changes in art throughout the 19th century in Europe. The class will ask why artists turned to different subject matter and new ways of expressing themselves, how these transformations influenced what the public came to expect of art and how artists assumed a different role in modern society than they had previously held. The course looks in depth at the development of 19th-century Romanticism, French Impressionism, and Expressionism. Includes artists such as Turner, Monet, Cassatt, Van Gogh, and Gauguin. Includes class visits and individual study from works of art at the Museum of Fine Arts. Hanni, Hole

[ART 244 20th-Century Art (S)
4 sem. hrs. Prereq.: Students are strongly encouraged, but not required to take ART 100, 141, or 142. Not offered in 2014-2015]
Explores cubism, surrealism, abstraction, and feminism in modern art. Considers the motivations behind these movements and their relationship to social and technological changes, as well as to long-standing traditions of art history. Augments investigation of paintings, sculpture, and photography with readings about and by artists such as Picasso, Duchamp, Magritte, Kahlo, Krasner, and Pollock. Uses local museums for further study. Hanni, Hole

ART 245 American Art (M1) (F)
4 sem. hrs.
Studies painting, photography, sculpture, and architecture from the colonial period to the 20th century. Considers how the nation during various historical periods defined and presented itself through art. Explores the experiences of women artists in America and the role of the U.S. in the international art world. Investigates themes of portraiture, landscape, and the development of modernism. Examines artists such as Copley, Sargent, Homer, Cassatt, and O'Keeffe at the Museum of Fine Arts. Hole.

ART 246 Art in the Age of Rembrandt (M1) (S)
4 sem. hrs.
Why is Rembrandt so important in western art? What characterizes his work and how is it influenced by the art and culture of Europe at the time? This course broadly explores Dutch painting during the 17th century, with emphasis on the special development of realism, secular subjects, a new kind of art market and enhanced opportunities for women artists. Rembrandt is considered in the context of his time, compared with his contemporaries, and discussed as both an innovator and a traditionalist. Students will work closely with the collections at the Museum of Fine Arts and the Gardner Museum. Hanni.

ART 247 Art, Women and the Italian Renaissance (F)
4 sem. hrs.
Was the Italian Renaissance a period of opportunity, new perspectives and changing values for women? In what ways did women participate in the creation and commissioning of art? What roles did they play as the subjects of art? What historical ideas influenced the places women inhabited in Renaissance society? Students will explore historical, social, and religious developments during the Renaissance as they influenced women's roles in society, including as writers, humanists, artists, and patrons of art. Students will become familiar with significant artists of the period, male and female, as they build their knowledge of the key ideas, values and practices of the period 1400-1600 in Italy. Class visits and individual study of the works from this period at the Museum of Fine Arts and the Gardner Museum. Hanni.

[ART 248 Women and Art (S)
4 sem. hrs. Prereq.: Students are strongly encouraged, but not required, to take ART 100, 141, or 142. Not offered in 2014-2015.]
Surveys paintings, sculpture, photography, and architecture by women artists from medieval times to the present, analyzes the representations of women in the visual arts, and introduces theoretical issues related to feminist theory and the place of women in an expanding canon. Examines the contributions of artists such as Georgia O'Keeffe, Eva Hesse, Lee Krasner, and Cindy Sherman. Hole.

ART 249 History of Photography (M1) (F-1)
4 sem. hrs.
Students will explore the diverse reasons for and shapes of photography's development and popularity from the mid 19th to the 21st century, as they explore how photographic technology has changed in response to conceptual demands from photographers and viewers and how expectations of photography have transformed over time. The course considers the dialogue between painting and photography now and in the past, as well as the genres of portraiture, landscape, documentary, and photojournalism. Hanni.

[ART 251 African Art: 3000 BC to the Present (M1)
4 sem. hrs. Not offered in 2014-2015.]
Introduces African art from 3000 BC through the present, including Egyptian, Ashanti, Benin, Dogon, Bambara, Ife, and Ethiopian art, as well as art from other African cultures. Includes guest speakers (artists, historians, curators, etc.) and visits to museums. Staff.

ART 252 Arts of China and Japan (M1) (S-1)
4 sem. hrs.
Introduces the cultures of Japan and China through a study of painting, sculpture, and architecture. Considers stylistic developments and regional and historical characteristics in the context of the social, religious, and political history of these countries. Makes use of the superb Asian collection at the Museum of Fine Arts for an important opportunity to study firsthand a wide variety of Asian art. Cloutier-Blazzard.

[ART 255 African American Art (M1)
4 sem. hrs. Not offered in 2014-2015.]
Surveys the history of African American art with a strong emphasis on the contributions of African people to American culture, including special attention to the role of African people in developing world art. Includes tours of museums, galleries, artists' studios, and other institutions involved in the arts. Staff.

ART 343 Special Topics in Art History (S)
4 sem. hrs.
Provides in-depth examination of a geographical area, time period, or theme. Uses a seminar format to equip students with greater facility in visual analysis, art historical methodologies, bibliographic study, individual research, and critical evaluation. Topics for particular semesters will be posted in advance of registration. Hanni, Hole.

ART 347 Art of the Gardner Museum (S)
4 sem. hrs. Prereq.: Requires consent of instructor. Students are strongly advised to have completed at least one art history course prior to enrolling in 347.
Examines the Isabella Stewart Gardner Museum in depth: the woman responsible for its existence, the cultural contexts in which it was formed around the turn of the century, and those in which it exists today. Through readings and course meetings at the museum, this upper-level seminar explores the spectacular collections at the Museum. Gardner's unique vision for displaying art in her palace, as well as the roles of various departments, and the challenges of being an idiosyncratic museum in 21st century America. Hanni.

ART 349 Directed Study (F, S)
4 sem. hrs.
Directed study addresses coursework required for the major or degree not being offered formally that semester. Students work under the close supervision of a faculty member. Consent is required for a directed study, which does not count toward the independent learning requirement. Staff.

ART 350 Independent Study (F, S)
4 sem. hrs. Staff.

ART/MUS 370 Internship in Art or Music (F, S)
4 or 8 sem. hrs.
Offers students hands-on experience in an arts organization such as a gallery, museum, music program, concert hall, or arts nonprofit. Internship sites are selected in consultation with advisor based on interest and learning goals. Staff.

F = Fall
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Interdisciplinary Major in Arts Administration

The Department of Art and Music offers this interdepartmental major in conjunction with the Department of Communications and the Program in Management. The major provides an opportunity for students to prepare for careers in the arts, including management, public relations, promotion and marketing, budgeting, art or music editing in museums or publishing houses, and management of public and corporate art activity, foundations, art galleries, and concert halls. A student may choose courses in art or music, depending upon her strengths and interests. Internship experience in one of these areas is an integral part of the major. The major offers a choice of emphasis in either management or communications. Departmental advising assists students in selecting the track appropriate for their career goals.

Requirements: Students are required to take 52 semester hours, including 32 in the art or music department and 20 in either management or communications as listed below.

Art

Two out of four studio courses; students cannot choose both ART/COMM 138 and ART/COMM 139.

ART 111	Draw What You See
ART 112	Color Studio
ART/ COMM 138	The Poetry of Photography
ART/ COMM 139	Color Photography CSI

In addition:

ART 141	Introduction to Art History: Egypt to The Renaissance
ART 142	Introduction to Art History: Baroque to the 20th Century
AADM 143	State of the Arts: An Introduction to Arts Administration
AADM 390	Arts in the Community

One elective in art history

Music

MUS 120	Introduction to Music: The Middle Ages to Early Romanticism
MUS 121	Introduction to Music: Early Romanticism to the Present
AADM 143	State of the Arts: An Introduction to Arts Administration
AADM 390	Arts in the Community

Three electives in music history, theory, or performance

Communications Track

COMM 122	Writing and Editing Across the Media
COMM 186	Introduction to Public Relations and Marketing Communications
COMM 281	Writing for Public Relations and Integrated Marketing Communications

And two of the following courses:

COMM 120	Communications Media
COMM 121	Visual Communication
COMM 123	Communications Technologies
COMM 124	Media, Messages, Society
COMM 210	Introduction to Graphic Design: Principles and Practices (requires COMM 123)
COMM 220	Video Production
COMM 244	Web I: Design for the World Wide Web (requires COMM 210)
COMM 260	Journalism (requires COMM 122)
COMM 262	Media Convergence
COMM 310	Feature Writing (requires COMM 122)

Business Track

MGMT 100	Foundations of Business and Management
MGMT 221	Project Management
MGMT 234	Organizational Communication and Behavior
MGMT 238	Managing Your Venture's Financial Bottom Line
MGMT 250	Marketing

Recommended:

ECON 100 Principles of Microeconomics
ECON 101 Principles of Macroeconomics
MATH 118 Introductory Statistics

Marketing Track

MGMT 100 Foundations of Business and Management
MGMT 250 Principles of Marketing

And three of the following courses:

MGMT 230 Why We Buy
MGMT 231 Creating Brand Value
MGMT 232A Strategic Marketing Communications I: Advertising
MGMT 232B Strategic Marketing Communications II: National Student Ad Competition
MGMT 233 Developing Customer Relationships
MGMT 348 The Sustainable Supply Chain
MGMT 394 Comparative Retail Strategies

Recommended:

ECON 100 Principles of Microeconomics
ECON 101 Principles of Macroeconomics
MATH 118 Introductory Statistics

Minor in Arts Administration

An arts administration minor may emphasize either music or art AND management or communications.

- AADM 143 and one other AADM course
- Two art history or two music history courses
- One course from the following: COMM 122, COMM 186, MGMT 100, and MGMT 110

COURSES

AADM 143 State of the Arts: An Introduction to Arts Administration (M1) (F-1,2)
4 sem. hrs.
Studies cultural organizations, their functions, and their role in a changing society. Instruction emphasizes backstage and firsthand exposure to visual and performing arts organizations through site visits, guest lecturers, readings, and discussion. Topics include the multicultural arena, public art, and the management of visual and performing arts institutions. Hole.

AADM 253 Special Topics in Arts Administration (S)
4 sem. hrs.
Focuses on a particular theme or methodology in arts administration and offers in-depth exploration and development of expertise in the field. Hole.

AADM 236 Arts Administration Institute/ New York City (S)
4 sem. hrs. Prereq.: Consent of instructor.
Offers firsthand experience of the rich cultural landscape of a major urban center in a four-week on-site experiential program that focuses on the following questions: What new relationships are emerging between art markets, philanthropy, public funding, and nonprofit arts organizations? What is the nature of "the public trust" in the art world of the 21st century? How do arts organizations balance tradition and change in a multicultural and global environment? What roles do arts administrators play in linking the arts to their audiences? Combines readings, research activities, guest speakers, and visits to events and programs. Hole.

AADM 390 Internship and Seminar: Arts in the Community (S-1,2)
8 sem. hrs. Prereq.: AADM 143 or consent of the instructor.
Provides an integrated seminar and internship experience for students in arts administration. Combines academic and experiential learning in a professional context. Includes internships in museums, galleries, or concert halls, theater companies, or other institutions involved in the arts. Reading and writing assignments explore issues related to nonprofit arts management. Hole.

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MUSIC

Music by its very nature absorbs prevailing musical, social, and expressive influences from many diverse cultures, thereby becoming truly international in spirit. Courses in music are designed as cultural enrichment for students whose principal interests are in other disciplines and for students pursuing a major in music. Music courses develop the student's ability to listen intelligently to a wide spectrum of music from many traditions. The introductory courses present a general appreciation of music by exploring traditional Western music as well as the music of non-Western cultures. Such experience is extremely beneficial to a liberal arts education and will enhance the student's creative work and performance in the humanities, science, and other professional areas. It also provides an excellent background for more specialized offerings. There is no strict sequence in which music courses must be taken; however, the introductory courses (MUS 120 or 121) are normally taken first.

Students who take MUS 349 Directed Study at the New England Conservatory are required to take MUS 110, 111, 120, or 121 before or at the same time as their first semester of applied music. Depending upon the student's musical background and with the permission of the instructor, it is possible to fulfill the course requirement for MUS 349 Directed Study with any Simmons music history or theory course. A student's musical and technical proficiency with any instrument or voice should be at an intermediate level or above. Therefore, a consultation with the music faculty is necessary before registration can be completed. The department welcomes students wishing to develop joint majors with other departments; such students should consult with the music faculty about ways to integrate their interests.

Majors in Music

Majors offered in music include arts administration, and a music major with a music history or an applied music (performance) track. The study of music can lead to careers in a wide variety of fields, including teaching, performance, arts administration, music editing and publishing, recording, programming for radio and television broadcasts, etc. The major in music would be enriched if combined with a major in another area, such as English, communications, management, or history.

Requirements: Students are required to complete 32 semester hours in one of the tracks listed below.

Applied Music Track

- Four applied music courses.
- One course in music theory.
- One course in music history and literature.
- Two electives chosen from music history or theory courses, depending upon interest.

Music History Track

- Four music history courses (two at the 200 level).
- One course in theory or theoretical studies.
- One applied music course.
- Two electives chosen from music history, theory, or applied studies, depending upon interest.

Interdisciplinary Major and Minor in Arts Administration

The Department of Art and Music offers an interdepartmental major in arts administration with an emphasis in music. Information concerning this major begins on page 58. A minor in arts administration is also offered. See page 59.

Minor in Music

A music minor consists of four music history/theory courses and one elective in music history, theory, or performance. Normally, at least two courses must be at the 200 level or above. A minimum of 12 semester hours must be taken within the department to complete a minor in music.

Other Programs

The New England Conservatory of Music

Performance studies and theoretical courses regularly offered at the New England Conservatory of Music may be elected for credit by qualified students. Under the provisions of an inter-institutional agreement between the New England Conservatory of Music and Simmons College, duly enrolled students at Simmons College may elect to include in their programs for full credit certain courses normally offered by the conservatory, subject to certain specified conditions, the details of which should be obtained from the Department of Art and Music. A Simmons student who wishes to pursue a course at the conservatory must be recommended by the music faculty at Simmons College. The student will then be referred to the New England Conservatory of Music. Simmons College and the New England Conservatory reserve the right to determine whether prerequisites for the course in question have been met and whether the student is fully qualified to pursue the course elected. Please see addtional information found under MUS 349 Directed Study on page 63.

The Simmons College Concert Choir

Danica Buckley, Music Director

The Simmons College Concert Choir is a 30- to 40-voice women's chorus open to all women in the Simmons community, including undergraduate, graduate, and continuing education students, as well as faculty and staff. Rehearsals begin in September and January and take place once a week. The Concert Choir prepares two programs each year, performing one major concert at the end of each semester, as well as with the New England Philharmonic Orchestra in Spring semester as invited. The repertoire includes classical music written for women's voices from the Renaissance to the 20th century. Some choral singing experience is helpful, but not necessary.

Minor in Performing Arts

The Colleges of the Fenway minor in performing arts integrates performing experiences with classroom study of the performing arts: dance, music, theater, and performance art. The minor includes study, observation, and practice of the performing arts. It consists of Introduction to Performing Arts, three discipline-specific courses (dance, music and theater), and one upper-level course, as well as three semesters of an approved performance ensemble. Contact Professor Gregory Slowik, the Simmons College performing arts advisor, for more information.

COURSES

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MUS 110 The Language of Music (M1) (F)
4 sem. hrs.
Introduces the language of music in non-Western and Western traditions. Discusses musical notation and terminology, tonal melodic singing and hearing, meter, rhythmic practice, and beginning concepts of harmony. Provides a beneficial background for other music courses. Slowik.

MUS 111 How Music Works (S)
4 sem. hrs.
Discusses the music of numerous cultures and stylistic periods and their function within various societies. Introduces examples of nontraditional notation leading to discussions and analysis of diverse compositions. Requires a basic understanding of music notation and familiarity with the keyboard. Reviews and strengthens concepts from MUS 110. Note: MUS 110 and 111 are designed in sequence, but may be taken separately. Slowik.

MUS 120 Introduction to Music: The Middle Ages to Early Romanticism (M1) (F)
4 sem. hrs.
Music conveys many emotions, from the most intimate expression to breathtaking grandeur. It may transport the listener to a distant time or a foreign land. Music has been used as a political tool, an adornment to religious experiences and for pure enjoyment. This survey of music concentrates on listening to and appreciating a wide variety of musical styles. Important goals of this course include developing an understanding of a diverse body of music, various compositional styles and the role music played within society; from the Middle Ages to the Renaissance, to Bach, Mozart, and early Beethoven. Slowik.

MUS 121 Introduction to Music: Early Romanticism to the Present (M1) (S)
4 sem. hrs.
Music conveys many emotions, from the most intimate expression to breathtaking grandeur. It may transport the listener to a distant time or a foreign land. Music has been used as a political tool, an adornment to religious experiences and for pure enjoyment. This survey of music concentrates on listening to and appreciating a wide variety of musical styles. Important goals of this course include developing an understanding of a diverse body of music, various compositional styles and the role music played within society, from the influence of non-Western cultures on international music, such as African and Asiatic, works of women composers, jazz, and musical theater. Slowik.

MUS 125 The Symphony (M1) (F)
4 sem. hrs
Enhances the listener's appreciation of symphonic music: symphonic trends from pre-classic through the 20th century, development of orchestral instruments and symphonic forms, and historical and biographical information about each composition and composer. Integrates live concerts by the Boston Symphony Orchestra in Symphony Hall and by the New England Philharmonic Orchestra. Slowik.

[MUS 130 (TC) Music in Austria: the Imperial Legacy (M1)
4 sem. hrs. Not offered in 2014-2015.]
Examines the lives of Haydn, Mozart, and Beethoven. Beginning in Salzburg, we study compositions by Mozart and other composers of Salzburg and attend performances in 18th-century houses, churches, and palaces where these composers worked on a daily basis. Then our venue changes to Vienna which offers an opportunity to experience the energy of a great city that has been a musical and political capital for centuries. Day trips include the lakes region of Salzburg, the Austrian Alps, and museums and historic sites. Slowik.

[MUS 141 Mozart: The Man and His Music (M1) (S)
4 sem. hrs.
Focuses on Mozart's life and music primarily by studying his compositions. Develops an understanding of the structure of the music as well as Mozart's relationship with 18th century Vienna. Discusses the effect of the Enlightenment upon the aristocracy, the church, and the musician. Requires no previous background in music. Slowik.

[MUS 165 Music in Film (M1) (S)
4 sem. hrs. Not offered in 2014-2015.]
Introduces the unique art of music for film. Screens films representing various eras and cultures and explores the film score. Presents genres including adventure, drama, musical, science fiction, and animated films. Studies music by the greatest film composers, including Max Steiner, Bernard Herrmann, John Williams, and others. Slowik.

[MUS 222 Music in America (M1) (F)
4 sem. hrs. Not offered in 2014-2015.]
Introduces America's multicultural musical tradition, including Native American, African American, and Hispanic contributions, with consideration of related material such as painting, sculpture, architecture, dance, and literature. Gives special attention to work songs, jazz, blues, ragtime, concert repertoire, and musical theater and their influence upon European cultures. Slowik.

[MUS 232 Bach to Beethoven: Music in the 18th Century (M1)
4 sem. hrs. Not offered in 2014-2015.]
Surveys music and related disciplines in the 18th century. Discusses great changes in society, contact with non-Western countries and the musician's place within society. Topics include Bach and Handel, E. Jacquet de la Guerre, Haydn and Mozart, the American and French Revolutions, Voltaire, Jefferson, and others. Slowik.

MUS 234 The Romantic Century (M1) (S)
4 sem. hrs.
In the midst of the chaos of the Napoleonic Wars and other upheavals during the 19th century, music in Europe changed dramatically. Balance and symmetry in music favored by the Classical composers were replaced by works containing a wealth and depth of extreme emotion and romance. Students study the revolutionary power in Beethoven's works, the rise of the Bohemian artist, and the passion and drama of Italian Grand Opera. Asiatic cultures such as Japan and Bali, the rise of nationalism as people struggle against the domination of empires, and a quirky fascination with the macabre are important influences on composers and their music. In addition, we study significant compositions by Clara Schumann, Fanny Mendelssohn-Hensel and American composer Amy Beach. Slowik.

MUS 239 The Music That Changed the World (M1) (F)
4 sem. hrs.
Studies the highly diversified gathering of artists, writers, and musicians in Paris at the dawn of the 20th century. Examines the music, art, and literature of these fascinating people. Topics include Debussy and Impressionism, Stravinsky and Picasso, influences of African culture, Paris International Exhibition, Gertrude Stein, Proust, and others. Slowik.

MUS 349 Directed Study (F,S)
4 sem. hrs.
Private lessons with faculty of the New England Conservatory. Requires musical and technical ability at an intermediate level or above on an instrument or voice to be studied. Department approval is required. Slowik.

MUS 350 Independent Study (F, S)
4 sem. hrs.
Individualized projects at an advanced level. Slowik.

MUS/ART 370 Internship (F, S)
4 sem. hrs.
Refer to ART 370. Staff.

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Department of Biology

D. Bruce Gray, *Chair and Associate Professor*
Mary Owen, *Professor*
Jane Lopilato, *Associate Professor*
Elizabeth Scott, *Associate Professor*
Maria Abate, *Assistant Professor*
Randi Lite, *Associate Professor of Practice*
Charlotte Russell, *Senior Lecturer*
Jyl Richards, *Laboratory Manager*
Tracy Machcinski, *Laboratory Supervisor*
Victoria Galloway, *Administrative Assistant*

The department's offerings are designed to help students develop an understanding of the scope and the specialties of biology, as well as an appreciation of modern biological trends. An inquiry-based approach is utilized in the laboratory components of biology courses; this experience is integral to a student's understanding of scientific principles and allows the student to apply critical thinking, problem solving, and creativity in approaching scientific problems. Undergraduate preparation in biology may lead to career opportunities in university, hospital, government and commercial laboratories in areas such as animal and plant physiology, developmental and evolutionary biology, genetics and molecular biology, neurobiology, cell biology, biochemistry, microbiology, immunology, ecology, marine biology, public health, and biotechnology. The curriculum also prepares students for graduate study in biology, medicine, dentistry, veterinary science, and allied health careers. Cooperation with other departments in the College provides opportunities for joint programs, such as interdisciplinary majors.The following is a list of majors and programs offered by the Biology Department:

- Biology
- Biochemistry
- Environmental Science
- Exercise Science
- Neuroscience and Behavior
- Public Health
- Accelerated five year programs: BS Biology/MS Nutrition, BS Exercise Science/MS Nutrition, or BS Public Health/MS Nutrition (jointly offered with Nutrition Department in School of Health Studies).
- Certification for teaching biology at the middle school and secondary school levels is also possible by enrollment in the education department.

For further information about the Biology Department or the Premedical Program refer to the Simmons College Webiste.

Departmental Honors

The Department of Biology offers the opportunity for students in any of our six majors and education track to receive Departmental Honors upon graduation. Students who have earned an outstanding GPA in Simmons biology courses (minimum of six required) and who receive an A in Bio 355 (Senior Thesis in Biology) will receive Departmental Honors in Biology. The designation of Departmental Honors will appear on the student's transcript.

Departmental Recognition

This designation in Biology is given to those seniors whom the department considers to have completed outstanding work in the department. Such recognition is included on the student's transcript.

Major in Biology

Biology is the study of life and includes a broad range of biological disciplines. Undergraduate women are well-prepared for graduate studies and careers with a strong foundation in biological principles and methodology as a result of the department's student centered classroom, laboratory, and research experiences. For students desiring a broad education in the life sciences, ranging from the molecular and cellular level to that of populations and ecosystems, this major provides maximum flexibility in preparation for careers in biology, biotechnology, and related fields; it also serves as excellent preparation for

graduate and professional schools.

Requirements: Students planning a program in biology satisfy the core requirements by taking the following courses:

Year 1:
BIOL 113 General Biology
BIOL 218 Principles of Zoology

Year 2:
BIOL 222 Animal Physiology
BIOL 225 Cell Biology

Year 3:
BIOL 336 Genetics

To complete the minimum requirements, students must take three additional courses in biology, at least two of which must be numbered 300 or higher. In the senior year, students must satisfy their independent study requirement by taking two semesters of BIOL 350, BIOL 355 or BIOL 370.

Prerequisites: Students are required to take CHEM 111 or 113, 114, and 225 as well as MATH 120 or Math 118 (or Math 227 or Math 229). Students interested in medical or dental school or in pursuing graduate study in certain areas of biology should plan to include additional courses in CHEM 226, MATH 121, and a year of physics. Students interested in careers in dentistry, medicine, optometry, podiatry, veterinary medicine, and the allied health professions should consult the health professions advisor, Professor Bruce Gray, Department of Biology.

Minor in Biology

A minor in biology requires BIOL 113 General Biology and four additional courses in biology, all of which must be designated BIOL and numbered 200 or above. Students should contact the department chairperson to discuss course selection.

No more than two courses can be counted from transfer credits; these must be approved by the department chairperson.

Education Track

This track is recommended for students majoring in elementary school education who desire a general science background with an emphasis in biology. It is **not** recommended for students planning on graduate school or research careers. Students wishing to teach on the secondary level must take the courses detailed above to fulfill the major in biology.

Requirements: Students taking the education track should enroll in BIOL 113 General Biology and CHEM 111 Introductory Chemistry: Inorganic in their first year. In subsequent years, students should enroll in four biology courses numbered above 200, one of which should be either BIOL 245 Principles of Ecology or BIOL 333 Marine Biology. Students must also take BIOL/PHYS 103 Great Discoveries in Science and any two of the following: CHEM 112 Introductory Chemistry: Organic, NUTR 111 Fundamentals of Nutrition Science, or PHYS 105 Science and Technology in the Everyday World: The Way Things Work.

The independent learning requirement can be satisfied by successfully completing EDUC 382 Practicum: Elementary School (Grades 1–6) or two semesters of BIOL 350 or BIOL 370.

Joint Major in Biochemistry

The major in biochemistry is jointly administered by the Departments of Biology and Chemistry and is approved by the American Chemical Society. The rapidly growing field of biochemistry involves the application of biological and chemical concepts and techniques to the understanding of life processes such as the determination of hereditary traits, utilization of energy, propagation of nerve signals, and the molecular basis of physiological and pharmacological phenomena.

Biochemists are involved in agriculture, medical research, biotechnology, nutritional research, and other areas at the interface of chemistry and biology. Students majoring in

biochemistry will be well equipped for professions in research and industry, as well as the pursuit of graduate study in biochemistry, medicine, genetics, and other related fields.

Requirements: The program consists of a core of chemistry and biology courses beginning in the first year and continuing for the first three years, a choice of two 300-level elective courses in chemistry and/or biology, and a one-year independent study project culminating in a thesis. In addition, there are six prerequisite courses in biology, chemistry, calculus, and physics.

The following list of requirements includes both the core and the prerequisite courses. A student may find it convenient to take MATH 120 and/or MATH 121 during the summer. The advanced biochemistry lab, CHEM 347, provides an opportunity to learn more advanced techniques in biotechnology.

Graduate School Preparation

To meet the ACS standards described above under chemistry major, biochemistry majors must include two additional 300-level chemistry electives chosen from CHEM 341, CHEM 343, CHEM 346, CHEM 347, or CHEM 348. Majors are also urged to take a physiology course such as Bio 222.

Requirements:

First Year

BIOL 113 General Biology
BIOL 221 Microbiology
CHEM 111 Introductory Chemistry: Inorganic
or CHEM 113 Principles of Chemistry
CHEM 224 Organic Chemistry I
MATH 120 Calculus I
MATH 121 Calculus II

Sophomore Year

BIOL 225 Cell Biology
CHEM 225 Organic Chemistry II
CHEM 216 Quantitative Analysis
PHYS 112, 113 Fundamentals of Physics

Junior Year

BIOL 337 Molecular Biology
CHEM 331 Thermodynamics and Kinetics
CHEM 345 Biochemistry
300-level elective in biology or chemistry

Senior Year

300-level elective in chemistry or biology

Biochemistry majors do their independent study research either in chemistry (CHEM 355) or in biology (BIOL 350 or BIOL 355). If registered for CHEM 355, biochemistry majors must also register for CHEM 390 Chemistry Seminar.

Joint Major in Environmental Science

Environmental science is a joint major offered by the Departments of Biology and Chemistry. This major recognizes the importance of environmental problems in the contemporary world and the expansion of career opportunities as well as graduate programs in this area. Environmental science is a broad interdisciplinary field working to understand the interactions among physical, chemical, biological, and human factors. A comprehensive understanding of how the environment functions and the influence of human actions has the potential for improved conservation, sustainable development, and restoration of natural resources. Concerns about environmental degradations are ever more pressing in the 21st century and have led to a growing demand for specialists in this field as well as programs to train these specialists.

Tracks

There are two tracks within the Environmental Science major: 1) the Environmental Biology Track, which emphasizes both laboratory and field component as well as broad interdisciplinary alternatives (see description of Environmental Biology Track below), and 2) the Environmental Chemistry Track, which emphasizes an analytical laboratory approach to environmental problems (see Chemistry Department for details on Environmental Chemistry Track).

Biology Track

First Year

BIOL 113 General Biology (M4)
CHEM 111 Introductory Chemistry: Inorganic
or CHEM 113 Principles of Chemistry
BIOL 104 Introduction to Environmental Science

Sophomore Year

MATH 118 Introductory Statistics
(or Math 227 or Math 229)
BIOL 218 Principles of Zoology
or BIOL 221 Microbiology
ECON 100 Principles of Microeconomics
CHEM 112 Introductory Chemistry: Organic
or CHEM 224 Organic Chemistry I

Junior Year

BIOL 245 Ecology*
ENVI 201 Environmental Forum (2 credits)**

Senior Year

BIOL 322 Evolution*
PHIL 139 Environmental Ethics*

*Please note these courses are offered every other year. Take care to plan course sequence accordingly

**This course is offered through the Colleges of the Fenway and may be listed as CR-101

Electives

In consultation with and with approval of the Environmental Biology concentration advisor, the student selects a total of five electives in addition to the core courses. With approval of the concentration advisor courses not included in this list can be selected as electives if consistent with the student's subfield concentration.

Two elective courses from the Science list: (at least one at the 300-level)

BIOL 222 Animal Physiology
BIOL 333 Marine Biology
BIOL 336 Genetics
BIOL 340 Plant Biology
or BIOL 107 Plants and Society
BIOL 345 Tropical Marine Biology (Field study travel)
BIOL 347 Human Development and Genetics
CHEM 216 Quantitative Analysis
CHEM 227 Energy and Global Warming
CHEM 342 Mechanistic Toxicology
HON 308 Sustainabilty and Global Warming
SURV 150 Overview of Surveying Technology (Wentworth) – GIS Skills
MATH 120 Calculus I
MATH 227 Biostatistical Design and Analysis
NUTR 150 International Nutrition Issues
PHYS 110 Introduction to Physics I
PHYS 111 Introduction to Physics II

Three elective courses from the Arts and Humanities course list:

ART 245 American Art
ECON 145 Economics of Sustainability and Resource Use
ECON 239 Government Regulation of Industry
ECON 247 Environmental Economics
HIST 205 Global Environmental History
MGMT 224 Socially-Minded Leadership
POLS 101 Introduction to American Politics
POLS 102 Introduction to International Politics
POLS 217 American Public Policy
POLS 220 International Organization and Law
SOCI 241 Health, Illness, and Society
SOCI 245 International Health
SOCI 267 Globalization

Independent Learning

This all-College independent learning requirement (eight semester hours) is usually met in the senior year in either the biology department through BIOL 350 Independent Laboratory Research, BIOL 355 Thesis, or BIOL 370 Internship or in the chemistry department through CHEM 350 Independent Study in Chemistry.

Chemistry Track

First Year

BIOL 113 General Biology
CHEM 113 Principles of Chemistry
or CHEM 111 Introductory Chemistry: Inorganic
CHEM 226 Qualitative Analysis
MATH 120 Calculus I
MATH 121 Calculus II

Sophomore Year

MATH 118 Introductory Statistics
CHEM 224 Organic Chemistry I
PHYS 112 Fundamentals of Physics I
PHYS 113 Fundamentals of Physics II

Junior Year

BIOL 104 Introduction to Environmental Science
or BIOL 245 Ecology
ENVI 201 Environmental Forum
CHEM 227 Energy and Global Warming
or HON 308 Sustainability and Global Warming
or CHEM 331 Thermodynamics

SeniorYear

PHIL 139 Environmental Ethics (2 credits)
CHEM 390 Chemistry Seminar (1 credit)

Electives (8 credits)

Choose two:
CHEM 225 Organic Chemistry II
CHEM 341 Advanced Analytical Chemistry
CHEM 342 Mechanistic Toxicology

Independent Learning

This all-College independent learning requirement (eight semester hours) is usually met in the senior year in either the biology department through BIOL 350 Independent Laboratory Research, BIOL 355 Thesis, or BIOL 370 Internship or in the chemistry department through CHEM 350 Independent Study in Chemistry.

Exercise Science Program

This program provides a challenging educational experience for students who wish to pursue health/fitness careers. The major provides hands on experience in the health/fitness industry tied to core academic preparation in the science of exercise and health. Students of exercise science will have the requisite coursework for graduate programs in Physical Therapy, Clinical Exercise Physiology, Kinesiology, and Exercise Science. Graduates of an exercise science program may work in commercial fitness centers, health clubs, community centers, corporate wellness programs, and nonprofit health promotion organizations. They may lead group exercise sessions, personal training sessions, and create and manage programs and facilities.

Exercise Science Major

Majors will complete four pre-requisite courses, a core consisting of ten courses plus two electives spread out across their four years. All majors are required to have CPR and First Aid Certifications by the end of the junior year. The suggested sequence for core courses is:

First Year

BIOL 113 General Biology (prereq. for BIOL 246)
CHEM 111 Introductory Chemistry: Inorganic (prereq. for BIOL 231)
CHEM 112 Introductory Chemistry: Organic (prereq. for BIOL 231)

Sophomore Year

BIOL 231 Anatomy and Physiology I
BIOL 232 Anatomy and Physiology II
BIOL 246 Foundations in Exercise and Health
MATH 118 Introductory Statistics (or Math 227 or Math 229)
PSYC 101 Introduction to Psychological Science
NUTR 112 Introduction to Nutrition Science

Junior Year

SNHS 361 Exercise Assessment and Prescription
PSYC 232 Health Psychology
BIOL 332 Exercise Physiology

PHYS 110 Introduction to Physics I (prereq. for SNHS 362)
CPR with AED Training at Heartsaver level (Health Care Provider level for DPT students)
First Aid Certification

Senior Year

BIOL 370 Internship (8 credits)
BIOL 362 Kinesiology
Elective from list
Elective from list

For Students in the Accelerated Physical Therapy program:

PT 602 and 603 Integrated Clinical Experience (2 credit) and PT 610 and 612/650 Research Methods and Applying Research to Practice (5 credit) are equivalent to 8 credits of internship PT 625 Fundamentals of Movement Sciences I is equivalent to BIOL 362 Kinesiology PHYS 111 is both a requirement for the PT program and is an elective from the Exercise Science list.

Exercise Science Electives:

BIOL 221 and 221L Microbiology and lab
PHYS 111 and 111L Introductory Physics II and lab
SOCI 241 Health, Illness, and Society
SOCI 345 Health Care Systems and Policy (SOCI 101 prereq.)
SOCI 266 Sociology of Sports
NUTR 110 Sociocultural Implications Nutrition
CHEM 223 Introduction to Biochemistry
NUTR 311 Nutrient Metabolism (CHEM 223 prereq.)
MCPHS BEH405A Mind-Body Medicine

Minor in Exercise Science

The Exercise Science minor allows any interested student an opportunity to gain knowledge of the role that exercise plays in health and disease.The minor consists of the following five courses:

BIOL 246 Foundations of Exercise and Health
BIOL 332 Exercise Physiology
MATH 118 Introductory Statistics
SNHS 361 Exercise Assessment and Prescription
Elective from the Exercise Science list.

For further information about the program in exercise science, contact Professor Randi Lite (Department of Biology). Students planning to attend medical, dental, or veterinary school should contact Professor Bruce Gray, Health Professions Advisor (Department of Biology), as early as possible to be sure to incorporate the courses required for admission to these professional schools.

Joint Major in Neuroscience and Behavior

Students interested in both biology and psychology may wish to choose the interdisciplinary major in neuroscience and behavior. Neuroscience draws from the social, natural, mathematical, and life sciences to address intriguing and difficult issues related to behavior and experience. This fast-growing field is yielding exciting new discoveries regarding the biological bases of behavior, conscious experience, and the relationship between physical and mental health. Completion of the major prepares students to work in a variety of research and clinical settings and, with judicious selection of electives, serves as an excellent preparation for advanced work in biology, psychology, or for medical, dental, or veterinary school. For further information about the program in Neuroscience and Behavior, contact Professor Bruce Gray (Department of Biology) or Professor Rachel Galli (Department of Psychology). Students planning to attend medical, dental, or veterinary school should contact Professor Bruce Gray, Health Professions Advisor (Department of Biology), as early as possible to be sure to incorporate the courses required for admission to these professional schools.

Requirements: Majors will complete a core consisting of nine courses plus five track-specific courses spread throughout their four years. A suggested sequence for core courses is:

First Year

PSYC 101 Introduction to Psychological Science
BIOL 113 General Biology
CHEM 111 Introductory Chemistry: Inorganic
or CHEM 113 Principles of Chemistry

Sophomore Year

MATH 118 Introductory Statistics
(or Math 227 or Math 229)
PSYC 201 Biological Psychology
PSYC 203 Research Methods in Psychology

Junior Year

PHIL 237 Philosophy of Mind
One course from the basic process category in psychology:
PSYC 232 Health Psychology
PSYC 243 Cognitive Psychology
PSYC 244 Drugs and Behavior
PSYC 245 Memory and Learning
PSYC 247 Perception

Senior Year

PB 347 Seminar in Psychobiology
Majors select one of two concentrations to add to the core:

(A) Neurobiology Track

CHEM 112 Introductory Chemistry: Organic
or CHEM 224 Organic Chemistry I
BIOL 225 Cell Biology
BIOL 334 Neurobiology
BIOL 337 Molecular Biology
An additional 200-level or higher biology course.

(B) Cognitive and Behavioral Track

BIOL 342 Topics in Behavioral Biology
PSYC 301 Research in Biopsychology
or PSYC 303 Research in Cognitive Processes
A 200-level or higher biology course
Two additional courses from the neuroscience list.

Courses cannot double count for both core sequence and the neuroscience lists.

Neuroscience List

PSYC 231 The Nature of Abnormal Behavior
PSYC 232 Health Psychology
PSYC 243 Cognitive Psychology
PSYC 244 Drugs and Behavior
PSYC 245 Memory and Learning
PSYC 247 Perception
PSYC 301 Research in Biopsychology
PSYC 303 Research in Cognitive Processes
CS 112 Introduction to Programming
PHIL 136 Philosophy of Human Nature
PHIL 238 Ways of Knowing
BIOL 222 Animal Physiology
BIOL 225 Cell Biology
BIOL 231 Anatomy and Physiology I
BIOL 334 Neurobiology
BIOL 335 Developmental Biology
BIOL 336 Genetics
CHEM 112 Introductory Chemistry: Organic
CHEM 223 Introduction to Biochemistry
NUTR 111 Fundamentals of Nutrition Science
or NUTR 112 Introduction to Nutrition Science

Independent Learning

This all-College independent learning requirement (eight semester hours) is usually met in the senior year in either the biology department through BIOL 350 Independent Laboratory Research, BIOL 355 Thesis, or BIOL 370 Internship or in the psychology department through PSY 350 Independent Study in Psychology or PSYC 380 Fieldwork in a Psychological Setting. Arrangements should be made with the student's psychobiology advisor before the end of the junior year.

Public Health Program

This program provides a unique and challenging educational experience for students who wish to combine an interdisciplinary liberal arts education with a specialty focus on public health. The major provides conceptual foundations and empirical bases for analyzing the interplay between science, society, and health, and prepares students for a variety of public health careers. The minor allows pre-med students and other health professions students an opportunity to augment their spe-

cialty education with this broad perspective. There is a rising demand for public health professionals, due to increased global concerns regarding infectious and chronic disease epidemiology, food and water safety, sanitation, and environmental health issues. Public health professionals have excellent employment prospects, as researchers, community health workers, and health program managers.

Public Health Major

Majors will complete a core consisting of nine courses plus five track-specific courses spread out across their four years. The suggested sequence for core courses is:

First Year

BIOL 113	General Biology
BIOL 104	Introduction to Environmental Science
SOCI 241	Health, Illness, and Society

Sophomore Year

BIOL 221	Microbiology — A Human Perspective
MATH 118	Introduction to Statistics
NUTR 150	International Nutrition Issues
or SOCI 245	International Health

Junior Year

SOCI 345	Health Care Systems and Policy
BIOL 346	Epidemiology and Infectious Disease

Senior Year

PH 347	Seminar in Public Health

Majors select one of two tracks to add to the core:

(A) Biology Track

BIOL 246	Foundations of Exercise and Health
BIOL 347	Human Development and Genetics
CHEM 111	Introductory Chemistry: Inorganic
CHEM 112	Introductory Chemistry: Organic

Students must choose one additional course from the biology list:

Biology Electives

BIOL 245	Ecology
BIOL 338	Microbial Pathogenesis
BIOL 341	Microbiology of Food, Water, and Waste
CHEM 327	Energy and Global Warming
HON 303	HIV/AIDS Intersections of Science
IT 225	Health Informatics
MGMT 234	Organizational Communication and Behavior
MATH 227	Biostatistical Design and Analysis
MATH 229	Regression Models
NUTR 110	Sociocultural Implications of Nutrition
PHIL 131	Biomedical Ethics
POLS 217	American Public Policy
PSYC 232	Health Psychology

(B) Social Analysis Track

NUTR 150	International Nutrition Issues
SOCI 239	Introduction to Social Research
SOCI 245	International Health

Students must choose three additional courses from the social analysis list:

Social Analysis Electives

AST/SOCI/ WGST 232	Race, Gender, and Health
HON 303	HIV/AIDS Intersections of Science
IDS 228	Service Learning in Nicaragua (TC)
IT 225	Health Informatics
MATH 227	Biostatistical Analysis and Design
MATH 229	Regression Models
MGMT 234	Organizational Communication and Behavior
PHIL 131	Biomedical Ethics
POLS 217	American Public Policy
PSYC 232	Health Psychology
SJ 220	Working for Social Justice
SJ 222	Organizing for Social Change
SOCI 210	Body Politics
SOCI 339	Qualitative Research Workshop
AST/SOCI/ WGST 365	Intimate Family Violence

Independent Learning

This all-College independent learning requirement (eight semester hours) will be met through courses in the biology or sociology

departments, usually in the senior year. In the biology department it will be met through BIOL 350 Independent Laboratory Research, BIOL 355 Thesis or BIOL 370 Internship. In the sociology department, it will be met through SOCI 350 Independent Study, SOCI 355 Thesis, or SOCI 370 Internship. Arrangements for satisfying the independent learning requirement must be made with the student's public health advisor before the end of the junior year.

Public Health Resources in Boston

Students will be encouraged to attend open lectures on Public Health in Boston. In addition, courses developed at Simmons will integrate guest speakers from the pool of expertise in the area.

Minor in Public Health

The minor consists of the following five courses:

BIOL 104 Introduction to Environmental Science
BIOL 346 Epidemiology and Infectious Disease
MATH 118 Introduction to Statistics
SOCI 241 Health, Illness, and Society
SOCI 245 International Health
or SOCI 345 Health Care Systems and Policy

For further information about the program in public health, contact the Program Directors: Professor Elizabeth Scott (Department of Biology) or Professor Valerie Leiter (Department of Sociology). Students planning to attend medical, dental, or veterinary school should contact Professor Bruce Gray, Health Professions Advisor (Department of Biology), as early as possible to be sure to incorporate the courses required for admission to these professional schools.

BS Biology/MS Nutrition Program

Students complete this accelerated BS/MS program in five years and receive a Bachelor of Science degree with a major in Biology and a minor in chemistry and a Master's of Science degree in Nutrition. Graduates of this program will find opportunities and careers in a variety of fields promoting health, which include research, government programs, weight loss centers, and exercise facilities. Application to this program occurs in the second semester of the student's junior year and is directed to the Chair of the Nutrition Department. A grade point average of 3.3 is required, but no GRE scores are necessary. The curriculum for this program is described below. Two graduate courses, SNHS 410 Research Methods and SNHS 450 Health Care Systems: Interdisciplinary Perspectives, are taken in the senior year and are counted toward the undergraduate degree credits, and also fulfill two of the graduate course requirements, giving the students a significant tuition reduction.

Requirements for the undergraduate biology major, chemistry minor, and graduate degree in nutrition:

Year One

FYS 101 First Year Seminar
FYS 102 First Year Writing
BIOL 113 General Biology
CHEM 111 Introductory Chemistry: Inorganic
or CHEM 113 Principles of Chemistry
Modern Language (101)
BIOL 218 Zoology
or BIOL 221 Microbiology
CHEM 224 Organic Chemistry I
FYS 103 First Year Writing II
Modern Language (102)

Year Two

CHEM 225 Organic Chemistry II
Modern Language (201)
MATH 120 Calculus I
Mode 1 Elective
CHEM 216 Quantitative Analysis
BIOL 225 Cell Biology
NUTR 112 Introduction to Nutrition Science
Elective

Year Three

BIOL 231 Anatomy and Physiology I
CHEM 345 Biochemistry
NUTR 237 The Practice of Community Nutrition

Mode 2 Elective
BIOL 232 Anatomy and Physiology II
BIOL 300-level elective
MATH 118 Introductory Statistics (M3)
Mode 5 Elective

Year Four
SNHS 410 Research Methods
BIOL 350 Independent Laboratory Research
or BIOL 370 Internship
BIOL 336 Genetics
Mode 6 Elective
SNHS 450 Health Care Systems
BIOL 300-level elective
Elective

Working with her advisor, a student will take SHS 410 Research Methods and SHS 450 The Health Care System: Interdisciplinary Perspectives during the fall and spring of senior year. Students need to maintain a 3.0 GPA to continue in the program. Please visit the Simmons College Website to view the *Nutrition Catalog* for graduate requirements.

BS Exercise Science/MS Nutrition Program

Students complete this accelerated BS/MS program in five years and receive a Bachelor of Science degree with a major in Exercise Science and a Master of Science degree in Nutrition and Health Promotion. Graduates of this program will find opportunities and careers in a variety of fields promoting health, which include research, government programs, weight loss centers, and exercise facilities. Application to this program occurs in the second semester of the student's junior year and is directed to the SHS Director of Admissions. A grade point average of 3.3 is required, but no GRE scores are necessary.

The curriculum for this program is described below. Two graduate courses, SNHS 410 Research Methods and SNHS 450 Health Care Systems: Interdisciplinary Perspectives, are taken in the senior year and are counted to the undergraduate degree credits***, and also fulfill two of the graduate course requirements, giving the students a significant tuition reduction.

Requirements for the undergraduate exercise science major and graduate degree in nutrition:

Year One
FYS 101 First Year Seminar
FYS 102 First Year Writing
BIOL 113 General Biology
CHEM 111 Introductory Chemistry: Inorganic
Modern Language (101)
CHEM 112 Introductory Chemistry: Organic
FYS 103 College Writing II
Modern Language (102)

Year Two
BIOL 231 Anatomy and Physiology I
Modern Language (201)
MATH 118 Introductory Statistics
Mode 1 Elective*
PSYC 101 Introduction to Psychological Science
BIOL 232 Anatomy and Physiology II
NUTR 112 Introduction to Nutrition Science
Elective

Year Three
PSYC 232 Health Psychology
CHEM 223 Biochemistry
NUTR 237 The Practice of Community Nutrition
Mode 2 Elective*
BIOL 332 Exercise Physiology
SNHS 361 Exercise Assessment and Prescription
PHYS 110 Introductory Physics I
Mode 5 Elective*
First Aid and CPR/AED Training

Year Four
SNHS 410 Research Methods***
BIOL 370 Internship (8 credits)
BIOL 362 Kinesiology
Mode 6 Elective*
SNHS 450 Health Care Systems***
Elective from the exercise science list**
Elective (general)
Elective (general)
*Modes M1, M2, M5, M6 do not have to be taken in order listed.

Exercise Science Electives:

BIOL 221	Microbiology
PHYS 111	Introductory Physics II
SOCI 241	Health, Illness, and Society
SOCI 345	Health Care Systems and Policy (SOCI 245 prereq)
SOCI 266	Sociology of Sports
NUTR 110	Sociocultural Implications of Nutrition
CHEM 223	Introduction to Biochemistry (required course for BS/MA program)
NUTR 311	Nutrient Metabolism (CHEM 223 prereq)
MCPHS BEH405A	Mind-Body Medicine

***Note that one of these courses would be taken as a fifth course during the senior year. Students need 127 unique credits to graduate with an undergraduate degree. This allows them to substitute one 3-credit course for the usual 4- credit offerings at Simmons. Since both of the graduate courses are 3-credits, then the student would have to take one of these as a fifth course, if they didn't have an extra course prior to the senior year.

Working with her advisor, a student will take SHS 410 Research Methods and SHS 450 The Health Care System: Interdisciplinary Perspectives during the fall and spring of senior year. Students need to maintain a 3.0 GPA to continue in the program. Please visit the Simmons College Webiste to view the *Nutrition Catalog* for graduate requirements.

BS Public Health/MS Nutrition Program

The Public Health major is an interdisciplinary major in Biology and Sociology and offers two tracks (Biology and Sociology). An accelerated five-year BS Public Health (Biology track)/MS Nutrition program is jointly offered by the Biology Department, College of Arts and Sciences and the Nutrition Department, School of Health Sciences.

Students complete this accelerated BS/MS program in five years and receive a Bachelor of Science degree with a major in Public Health and a Master of Science degree in Nutrition and Health Promotion. Graduates of this program will find opportunities and careers in a variety of fields promoting health, which include research, government programs, weight loss centers, and exercise facilities. Application to this program occurs in the second semester of the student's junior year and is directed to the SNHS Director of Admissions. A grade point average of 3.3 is required, but no GRE scores are necessary. The curriculum for this program is described below. Two graduate courses, SNHS 410 Research Methods and SNHS 450 Health Care Systems: Interdisciplinary Perspectives, are taken in the senior year and are counted to the undergraduate degree credits***, and also fulfill two of the graduate course requirements, giving the students a significant tuition reduction.

Requirements for the undergraduate Public Health major and graduate degree in Nutrition:

Year One

FYS 101	First Year Seminar
FYS 102	First Year Writing
BIOL 113	General Biology
BIOL 104	Introduction to Environmental Science
SOCI 241	Health, Illness, and Society
CHEM 111	Introductory Chemistry: Inorganic
CHEM 112	Introductory Chemistry: Organic
FYS 103	College Writing II
Modern Language (101)	

Year Two

BIOL 221	Microbiology
MATH 118	Introductory Statistics
NUTR 112	Introduction to Nutrition Science
BIOL 246	Foundations of Exercise
Modern Language (102)	
Mode 1 Elective*	
BIOL 231	Anatomy and Physiology I
BIOL 232	Anatomy and Physiology II

Year Three

SOCI 345	Health Care Systems and Policy
BIOL 346	Epidemiology and Infectious Disease

BIOL 347 Human Development and Genetics
Modern Language (201)
Mode 2 Elective*
CHEM 223 Biochemistry
NUTR 237 The Practice of Community Nutrition

Year Four

BIOL 350/370 Independent Study/Internship (8 credits)
PH 347 Seminar in Public Health
Biology Elective
Mode 5 Elective*
Mode 6 Elective*
SNHS 410 Research Methods
SNHS 450 Health Care Systems***

*Modes M1, M2, M5, M6 do not have to be taken in order listed.

***Note that one of these courses would be taken as a fifth course during the senior year.

Students need 127 unique credits to graduate with an undergraduate degree. This allows them to substitute one 3-credit course for the usual 4-credit offerings at Simmons. Since both of the graduate courses are 3-credits, then the student would have to take one of these as a fifth course, if they did not have an extra course prior to the senior year.

Working with her advisor, a student will take SNHS 410 Research Methods and SNHS 450 The Health Care System: Interdisciplinary Perspectives during the fall and spring of senior year. Students need to maintain a 3.0 GPA to continue in the program. Please visit the Simmons College Website to view the *Nutrition Catalog* for graduate requirements.

Policy on Combinations of Double Majors or Minors

Students may double major or have a combination of a major and a minor or two minors from among the different majors above with some restrictions. Some combinations are not allowed. Please see the Biology Department website for the detailed policy.

COURSES

BIOL 102 Biology of Human Development (M4) (F-2)

4 sem. hrs. Not a prerequisite for further courses in the department.
Explores human development across the life span and the issues and processes that recur throughout that span. Examines human development from the embryonic period through aging and provides a practical understanding of individual growth and change. Includes lecture and laboratory sessions. Owen.

BIOL/PHYS 103 Great Discoveries in Science (M4) (F-1,2)

4 sem. hrs. Not a prerequisite for further courses in the department.
Focuses on breakthrough ideas concerning the universal laws of nature, the origin and composition of the universe, the nature of matter, and the origin and evolution of life. Encourages learning through inquiry and cooperative strategies to foster an appreciation of the processes, accomplishments, and limitations of science. Includes lecture and laboratory sessions. Staff.

BIOL 104 Introduction to Environmental Science (S-1)

4 sem. hrs.
Introduces basic principles of ecology and environmental science relevant to the interactions between humans and their environment, unity and interconnections of life, and processes that drive ecological health. Relevance of ecology to today's society with emphasis on natural resource use, conservation, and the relationships of ecological health to human health. Staff.

[BIOL 107 Plants and Society (M4) (S-2)

4 sem. hrs. Not a prerequisite for further courses in the department.
Covers basic plant form, function, and life cycle, as well as plant diversity as related to human use and potential uses of plant biotechnology. Surveys the historical and current use of plants by humans as sources of food, beverages, medicines, clothing, and shelter. Includes lecture and laboratory sessions. Staff.

F = Fall
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1 = AY 2014–2015
2 = AY 2015–2016
M = Mode
* = Schedule t.b.a.

BIOL 109 Biology of Women (M4) (S-2)
4 sem. hrs. Not a prerequisite for further courses in the department.
Considers biological factors that contribute to sex identification and the role of women in contemporary society. Emphasizes the genetic, developmental, anatomical, and physiological differences between the sexes and the behavioral consequences of those differences. Includes lecture and laboratory sessions. Staff.

BIOL 113 General Biology (M4) (F, S-1,2 U-1,2)
4 sem. hrs.
Introduces basic principles of biology, including cell structure and function, biochemistry, and metabolism, Mendelian and molecular genetics, and discussion of the theory of evolution. Includes lecture and laboratory sessions. Staff.

BIOL 113HON Honors General Biology (F-1,2)
4 sem. hrs. Prereq.: Admittance in the Honors Program.
See description for BIOL 113 General Biology. Staff.

BIOL 123N Principles of Microbiology (M4) (F-1,2) [For nursing majors]
4 sem. hrs. Does not satisfy requirements for biology major or minor.
This introductory course provides the basis for understanding the nature of human disease caused by microbial pathogens and viral agents. It covers the fundamental principles of cell structure and compares prokaryotic and eukaryotic cells, viral agent, bacterial genetics and antibiotic resistance, the principles of infectious disease, pathogenesis and immune response, the importance of vaccination as a key public health measure, nosocomial infection, and hospital infection control. Scott, Staff.

BIOL 218 Principles of Zoology (S-1,2)
4 sem. hrs. Prereq.: BIOL 113 or consent of instructor.
Studies animal form and function, the origin of animal diversity, and the strategies that animals use to thrive in diverse environments. Considers taxonomy and phylogeny of major animal groups. Includes lecture and laboratory sessions. Abate.

BIOL 221 Microbiology (S-1,2; U-1,2)
4 sem. hrs. Prereq.: BIOL 113, CHEM 111 or 113; completed or concurrent enrollment in CHEM 112 or 114.
Introduces the biology of microorganisms: bacteria, viruses, and fungi. Stresses control of microbial populations, systematic study, and use of quantitative methods. Includes lecture and laboratory sessions. Scott, Staff.

BIOL 222 Animal Physiology (F-1,2)
4 sem. hrs. Prereq.: BIOL 113, Chem 111 or 113.
Studies basic organ system functions in vertebrates and selected invertebrates. Uses living and preserved animals as well as computer simulation to reveal underlying principles of integration of cardiovascular, respiratory, excretory, digestive, reproductive, nervous, and endocrine function in animals. Includes lecture and laboratory sessions. Gray, Owen.

BIOL 225 Cell Biology (S-1,2)
4 sem. hrs. Prereq.: BIOL 113; BIOL 218 or 221; CHEM 111 or 113; CHEM 112 or 114; or consent of instructor.
Presents a thorough study of the cell, including structure, function, cell diversity, and methods of analysis. Examines major biochemical pathways of the cell in relation to particular organelles. Laboratory exercises introduce a wide range of techniques used by cell biologists. Lopilato, Owen.

BIOL 231 Anatomy and Physiology I (F-1,2; U-1,2)
4 sem. hrs. Prereq.: BIOL 113 and BIOL 218, 221 or 246; CHEM 111 or 113.
Presents an integrated approach to the fundamental facts and concepts of human anatomy and physiology. Examines the constituents of the human body through investigation of tissue types and histology, with further emphasis on skeletal/muscular and nervous systems, and endocrine control. Laboratory includes histology, gross anatomy, dissection, and physiological experiments. Lite, Russell.

BIOL 231N Anatomy and Physiology I (S-1,2) [For nursing majors]
4 sem. hrs. Prereq.: BIOL 123 or BIOL 113; CHEM 110 or CHEM 111 or CHEM 113.
See description for BIOL 231 Anatomy and Physiology I. Gray, Russell, or Staff.

BIOL 232 Anatomy and Physiology II (S-1,2; U-1,2)
4 sem. hrs. Prereq.: BIOL 123 or BIOL 113; BIOL 231; CHEM 110 or CHEM 111 or CHEM 113.
Introduces structural relationships and functional integration of major systems of the human body, with emphasis on cardiovascular, lymphatic, immunological, respiratory, digestive, metabolism, renal, reproductive, and homeostatic systems. Laboratory includes histology, gross anatomy, dissection, and physiological experiments. Lite, Russell.

BIOL 232N Anatomy and Physiology II (F-1,2) [For nursing majors]
4 sem. hrs. Prereq.: BIOL 123; BIOL 231; CHEM 110.
See description for BIOL 232 Anatomy and Physiology II. Gray, Staff.

[BIOL 245 Principles of Ecology (F-1)
4 sem. hrs. Prereq.: BIOL 113; BIOL 218 or 221; or consent of the instructor.
Examines interrelations of plants and animals and the environment. Covers biological adaptations and biogeochemical cycles. Analyzes geographical, chemical, and biological aspects of the environment and their application to conservation, with an emphasis on New England. Includes fieldwork in mountain, marsh, bog, and rocky-shore ecosystems. Staff.

BIOL 246 Foundations of Exercise and Health (S-1,2)
4 sem. hrs. Prereq.: BIOL 113.
Class and lab introduce the student to the foundations of exercise that enhance health and prevent disease. Students learn to evaluate epidemiologic literature, studying factors that link lack of physical activity with the major chronic diseases of the present time. Lite.

BIOL 322 Evolutionary Biology (F-2)
4 sem. hrs. Prereq.: BIOL 113, BIOL 218. Or consent of instructor.
This discussion-based course explores the function of characteristics of species, populations and communities in an evolutionary context. Significant historical papers and contemporary advances to model and quantify outcomes of evolution are discussed. Potential topics are mate choice, altruism, phenotypic plasticity, plant-herbivore relationships, coevolution, biodiversity, human impacts, and constraints on evolution. Abate.

[BIOL 331 Immunobiology (S-1)
4 sem. hrs. Prereq.: BIOL 225 and CHEM 225, or consent of the instructor.]
Considers the basic principles of immunology with applications of immunologic theory and techniques to microbiology, biochemistry, genetics, developmental biology, and evolution. Canfield.

BIOL 332 Exercise Physiology (F-1,2)
4 sem. hrs. Prereq.: BIOL 222 or BIOL 231.
Studies the physiological and adaptive responses of the human body to acute and chronic exercise stress. Examines how exercise affects major organ systems across the spectrum of healthy and unhealthy populations. Laboratory uses a variety of exercise equipment to apply physiological concepts to exercise testing, prescription, and training. Lite.

BIOL 333 Marine Biology (S-1)
4 sem. hrs. Prereq.: BIOL 113, BIOL 218; CHEM 111 or 113, and CHEM 112 or 114
Introduces the marine environment and its diverse communities, focusing on the classification and adaptations of marine organisms. Studies geological, physical, and chemical aspects of the environment. Includes laboratory sessions and field trips. Abate.

BIOL 334 Neurobiology (F-2)
4 sem. hrs. Prereq.: BIOL 225 or BIOL 231 or Psy 201 or consent of the instructor.
Introduces human brain function using comparative and evolutionary concepts with emphasis on molecular, cellular, and neurophysiological techniques. Uses neuropathologies and disorders to illustrate basic concepts. Laboratory introduces students to neuroanatomy and basic techniques in neuroscience research. Gray.

BIOL 335 Developmental Biology (S-2)
4 sem. hrs. Prereq.: BIOL 225.
Studies the morphological changes that occur in the development of organisms and the molecular events that underlie these processes. Laboratory sessions explore the development of many organisms, including vertebrates, invertebrates, and plants. Owen.

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* = Schedule t.b.a.

BIOL 336 Genetics (F-1,2)
4 sem. hrs. Prereq.: BIOL 225 or consent of the instructor.
Studies the principles of classical and molecular genetics in both eukaryotic and prokaryotic genetics systems as well as population and evolutionary genetics. Emphasizes problem solving to illustrate techniques of genetic analysis. Includes lecture and laboratory sessions. Lopilato.

BIOL 337 Molecular Biology (S-1)
4 sem. hrs. Prereq.: CHEM 225 and BIOL 225 or consent of the instructor.
Examines gene structure and function, regulation of DNA, RNA, and protein synthesis, the control of gene expression, and the use of recombinant technology as an investigative tool. Includes lecture and laboratory sessions. Lopilato.

BIOL 338 Microbial Pathogenesis (F-2)
4 sem. hrs. Prereq.: BIOL 225.
Considers host-pathogen relationships by exploring the molecular and cellular mechanisms by which selected viruses, bacteria, and parasites invade host cells, commandeer cellular machinery, evade the host immune response, and cause cellular damage. Drug and vaccine development will also be considered. Lopilato, Staff.

BIOL 339 Special Topics in Biology (F, S-1,2)
4 sem. hrs. Prereq.: Consent of the instructor.
An intensive study of a specific topic in biology. Topics vary from year to year in response to faculty expertise, student interest, and current developments in biology. Staff.

BIOL 340 Plant Biology (S-2)
4 sem. hrs. Prereq.: BIOL 113; BIOL 218 or 221; CHEM 111 or 113; CHEM 112 or 114; or consent of the instructor.
Introduces the physiology, biochemistry, and control of growth and development in higher plants. Topics include photosynthesis, hormonal regulation of development, transport mechanisms, plant tissue culture, nitrogen fixation, and plant pathogen relations. Includes lecture and laboratory sessions. Staff.

BIOL 341 Microbiology of Food, Water, and Waste (F-1)
4 sem. hrs. Prereq.: BIOL 221 or consent of instructor.
Applies the principles of microbiology to food and beverage production, and to understanding the challenges of producing safe food and drinking water in developed and developing countries. The use of microbes in waste bioremediation is also considered. Laboratory sessions provide opportunities for research on selected topics. Lectures, labs, field trips. Scott.

BIOL 342 Behavioral Biology (F-1)
4 sem. hrs. Prereq.: BIOL 113 or BIOL 123; BIOL 218 or 221 or Psy 101; CHEM 110, or 111 or 113, or consent of instructor.
Examines the modern hypothesis-driven scientific study of behavior. Interactions between the genome and environmental factors are studied in invertebrate and vertebrate species including the human in the following areas: communication, feeding, predation, courtship, parenting, cooperation, and aggression. Includes a semester-long fieldwork project. Gray.

BIOL 345 Tropical Marine Biology (S-2)
4 sem. hrs. Prereq.: BIOL 113 and BIOL 218 or consent of the instructor.
Explores the interrelationships of marine organisms and their environment. Includes lecture and laboratory components at Simmons College and a 10-day field trip experience at a field station on the island of San Salvador, Bahamas. Provides the opportunity to explore the open ocean and coral reefs and contributes to a better understanding of the delicate biological balance on isolated islands. Owen.

BIOL 346 Epidemiology of Infectious Disease (S-1,2)
4 sem. hrs. Prereq.: BIOL 113 and BIOL 104 or consent of the instructor.
Introduces the basic methods for infectious disease epidemiology and case studies of important disease syndromes and entities. Basic methods include descriptive epidemiology, outbreak investigations, disease surveillance, case-control studies, cohort studies, laboratory diagnosis, molecular epidemiology, dynamics of transmission, and assessment of vaccine field effectiveness. Scott, Staff.

BIOL 347 Human Development and Genetics (F-1)
Prereq.: BIOL 104 and BIOL 113.
Explores human development across the life span and the affect of genetic and environmental factors on growth, development and human behavior, and includes analysis of the impact of early-life conditions on the health of individuals and populations. Intersects with courses in the public health major including nutrition, exercise physiology and epidemiology. Owen.

BIOL 349 Directed Study (F, S-1,2)
4 sem. hrs. Prereq.: Consent of the instructor.
Directed study addresses coursework required for the major or degree not being offered formally that semester. Students work under the close supervision of a faculty member. Consent is required for a directed study, which does not count toward the independent learning requirement. Staff.

BIOL 350 Independent Laboratory Research (F, S-1,2)
8 sem. hrs. Prereq.: Senior standing, consent of the department.
Usually taken for two semesters (eight semester hours) but may be elected for one semester (eight semester hours) at the discretion of the faculty sponsor. Arrangements for satisfying this independent learning requirement should be made with the student's advisor or BIOL 350 coordinator before the end of the junior year. Staff.

BIOL 355 Thesis (S-1,2)
4 sem. hrs. Prereq.: One semester of BIOL 350 or BIOL 370, Senior standing, consent of the department.
Includes a thesis and an oral presentation at a scientific meeting or symposium. Required for all students completing an honors thesis in biology. Students must register for BIOL 350 or BIOL 370 in the first semester of their senior year. Staff.

BIOL 362 Kinesiology (S-1,2)
4 sem. hrs. Prereq.: PHYS 110, BIOL 231.
The analysis of human movement based on anatomical and mechanical principles. Emphasis is given to the application of these principles for the understanding of human movement and performance. Musler.

BIOL 370 Internship (F, S-1,2)
8 sem. hrs. Prereq.: Senior standing, consent of the department.
Provides a supervised professional experience off campus. Potential sites include clinical settings, government agencies, conservation groups, and zoos. Placement is the student's responsibility, with the support of the Career Education Center and the approval of the department. Arrangements for satisfying this independent learning requirement should be made with the student's advisor or BIOL 370 coordinator before the end of the junior year. Staff

NB 347 Seminar in Neuroscience (S-1,2)
4 sem hrs. Prereq: Consent of the instructor.
Normally open to only senior Neuroscience and Behavior majors.
Addresses current topics through readings, presentations, field trips and other activities. Gray. Galli.

PH 347 Public Health Senior Seminar (F-1,2)
4 sem. hrs. Prereq: Consent of the instructor.
Normally open only to Senior Public Health Majors.
Addresses the history of Public Health, discusses the current fields of Public Health and offers the student the opportunity to explore and learn about employment and graduate opportunities through readings, video and film, guest speakers, field trips, presentations and other activities. Scott. Leiter.

School of Nursing and Health Sciences Courses for Exercise Science Majors

SNHS 361 Exercise Assessment and Prescription (S-1,2)
4 sem. hrs. Prereq.: BIOL 332, or consent of instructor.
Class and Lab familiarize students with the basic principles and practices of fitness assessment and exercise prescription for healthy individuals and those with controlled risk factors.

F = Fall
S = Spring
U = Summer
TC = Travel Course
1 = AY 2014–2015
2 = AY 2015–2016
M = Mode
* = Schedule t.b.a.

Department of Chemistry and Physics

Richard W. Gurney, *Chair and Associate Professor*
Michael D. Kaplan, *Professor*
Leonard J. Soltzberg. *Professor Emeritus*
John Warner, *Visiting Professor*
Michael J. Berger, *Associate Professor*
Jennifer A. Canfield, *Associate Professor*
Nancy E. Lee, *Associate Professor*
Erica M. Gunn, *Assistant Professor*
Michael Jordan, *Senior Lecturer*
Changqing Chen, *Senior Lecturer*
Cheryl L. Lavoie, *Senior Lecturer*
Stephanie Walker, *Senior Lecturer*
Mirela G. Mustata, *Senior Lecturer*
Joseph Genevich, *Physics Lab Technician*
Kris McDonough, *Administrative Assistant*

Chemistry and physics lie at the foundation of modern science. Careers in these fields span the entire range of contemporary technologies. The majors in chemistry and physics provide training for students planning careers in the chemical and physical sciences and also for those whose interests lie in biology, medicine, veterinary, dental, pharmacy, materials science, chemistry management, secondary education, the environment, and sustainability. Our program is built upon a strong foundation of materials science, sustainability, and green principles; we instill these ethics throughout our curriculum and research. Courses in chemistry and physics also provide a strong service to majors in Public and Allied Health. More than half of the Simmons College undergraduate population will, at some stage of their degree program, take a course in the Department of Chemistry and Physics; the curriculum of the department is designed to satisfy the diverse needs of these students.

Each graduate of our department will have completed an integrated, rigorous program, which includes foundational course work in chemistry/physics and in-depth course work in chemistry/physics or chemistry/physics-related fields. The ACS-certified degrees further emphasize laboratory experience and the development of professional skills. Advanced coursework and educational activities outside the traditional classroom, such as independent research, provide students the opportunity to conduct individual research projects or participate as a member of a research team. Writing and defending their senior independent study thesis better prepares our majors to enter not only graduate and professional schools, but also prepares our majors for direct entry into clinical and research related industries directly upon graduation.

Our innovative research-integration program brings students into genuine laboratory research projects in their courses beginning in the first semester of their first year. After declaring a major in our department, students select one of the laboratory carrels in the W. M. Keck Independent Study Laboratory (S430) or within a Faculty research laboratory, where they carry out much of the rest of their laboratory and course work. Grants to Simmons have provided the department with instrumentation beyond the scope usually available at undergraduate colleges. The American Chemical Society (ACS) promotes excellence in chemistry education for undergraduate students through approval of our baccalaureate chemistry program. The ACS certifies that we offer our students "a broad-based and rigorous chemistry education that provides students with the intellectual, experimental, and communication skills to participate effectively as scientific professionals." At graduation, chemistry majors will have a set of fundamental competencies that are knowledge-based, performance/skills-based, and professional. In addition to the chemistry and biochemistry major approved by the American Chemical Society and the physics major, Simmons offers a number of special chemistry and physics related programs:

• Interdisciplinary major in environmental science (tracks in chemistry or biology).

• Dual degree in chemistry (B.S.) and pharmacy (PharmD), in collaboration with Massachusetts College of Pharmacy and Health Sciences.
• Joint major in chemistry and management.
• MAT in teaching chemistry fast-track - (The MAT fast-track program permits students to decrease the time required to obtain a master's degree by starting graduate courses during the undergraduate years. A science major may pursue this program to obtain secondary school teaching credentials).
• M.S. in science librarianship fast-track – (The program in library and information science will appeal to students interested in the application of new technology to science information retrieval).
• Minor in sustainability.
• Minor in physics of materials.
• M.S. in Chemistry or Applied Physics (through an articulation agreement with the University of Oregon Masters Internship Program - a 1-year program - following the Simmons B.S. in Chemistry, Biochemistry or Physics). For the Program in Physics, see pages 210-213.

Students who major in a program of study in Chemistry or Physics can use one AP test score of five to replace CHEM 113, a core requirement of the major. Students who major in a program of study in Chemistry or Physics can use an IB test score of six or seven to replace CHEM 113 or CHEM113 & CHEM226, respectively. Enrollment in CHEM115 in the Fall term, instead of CHEM113, is recommended for these students.

Honors in Chemistry and Physics:

The Department of Chemistry and Physics will grant "Chemistry & Physics Departmental Honors" to students graduating with majors within the Department who have earned a cumulative GPA of 3.8 or above and also earned an "Honors Thesis" designation. An "Honors Thesis" designation will be awarded to an exceptional senior thesis completed for Independent Study within the Department, having earned an A on all three thesis work categories – work in the laboratory, written thesis document, and thesis defense.

Student Competencies:

Knowledge-Based
All our graduates will be able to:
• Master a broad set of chemical knowledge in the basic areas of the discipline (organic, inorganic, analytical, physical, and biological chemistry).
• Solve quantitative and qualitative problems competently by: identifying the essential parts of a problem and formulating a strategy for solving the problem, rationally estimating the solution to a problem, applying appropriate techniques to arrive at a solution, testing the correctness of the solution, and interpreting the results.

Performance/Skills-Based
All our graduates will demonstrate the ability to:
• Design chemical experiments, properly carry out the experiments, troubleshoot experiments, appropriately record and interpret the results, and recognize what constitutes "reasonable" data.
• Use standard laboratory equipment, modern instrumentation, and classical techniques to carry out experiments.
• Follow proper procedures and regulations for safe handling and use of chemicals.
• Communicate the concepts and results of laboratory experiments through effective writing and oral communication skills.
• Use computers in data acquisition and processing, while using available software as a tool for data analysis.
• Employ modern library search tools to locate and retrieve scientific information about a topic, chemical, chemical technique, or an issue related to chemistry.

Professional
All graduates will:
• Maintain the integrity of data and demonstrate ethical and professional standards, in accordance with the American Chemical Society guidelines for professional conduct.

• Act in a highly ethical and professional capacity as a scientist in the articulation, evaluation, and employment of methods and chemicals that are benign for human health and the environment, which include but are not limited to the 12 Principles of Green Chemistry, the 12 Principles of Green Engineering, and the Principles of Global Sustainability (as set forth by the Report of the Brundtland Commission, Our Common Future, in 1987).
• Successfully pursue personal career objectives following graduation. These may include an advanced education in professional or graduate school, a scientific career in government or industry, a career in teaching, or a related career.
• Function successfully as part of a team, exhibit good citizenship in group interactions, and be an active contributor to group projects.

American Chemical Society Certified Majors

Graduates who attain an ACS certified degree must complete requirements that exceed those of the non-certified degrees. The certification ensures that the comprehensive undergraduate experience provides an excellent foundation for a career in the molecular sciences. A certified degree signifies that a student has completed "an integrated, rigorous program, which includes introductory and foundational course work in chemistry and in-depth coursework in chemistry or chemistry-related fields. The certified degree also emphasizes laboratory experience and the development of professional skills." Certification that the student's curricular program has met the ACS Certification is not required for any career or graduate study. ACS Certified Majors include: B.S. Chemistry & B.S. Biochemistry

Major in Chemistry

B.S. graduates in chemistry work in laboratories developing pharmaceuticals, cosmetics, energy resources, solutions to environmental problems, and other areas of modern industry. A chemistry bachelor's degree is also excellent preparation for professional schools of medicine or dentistry, especially with the increasing dependence of medical research and practice on knowledge of living systems at the molecular level. With the M.S. or Ph.D., a scientist can take responsibility for planning research and supervising laboratories. Excellent career opportunities are found in private industry, in government laboratories, and on college and university faculties.

Sequencing Requirements

Students considering a major in chemistry should take CHEM 113 and 114 during their first year. In some cases, students with little or no previous high school background may be advised to take CHEM 111 instead of 113. MATH 101 will be recommended by advisors for students in chemistry who may need to review basic mathematical concepts. By the middle of the junior year, students should have taken MATH 220 and PHYS 112 and 113.

Major in Chemistry

First Year

CHEM 113 Principles of Chemistry
CHEM 216 Quantitative Analysis
MATH 120 Calculus I
MATH 121 Calculus II

Sophomore Year

CHEM 225 Organic Chemistry I
CHEM 225 Organic Chemistry II
PHYS 112 Fundamentals of Physics I
PHYS 113 Fundamentals of Physics II

Junior Year

CHEM 331 Thermodynamics and Kinetics
CHEM 332 Quantum Mechanics and Molecular Structure
MATH 220 Multivariable Calculus
A 300-level elective in chemistry

Senior Year

CHEM 355 Independent Study with Thesis (eight semester hours)
CHEM 390 Chemistry Seminar (required; 1 credit)
A 300-level elective in chemistry

300-level electives in chemistry include:

CHEM 341 Advanced Analytical Chemistry
CHEM 342 Mechanistic Toxicology
CHEM 343 Advanced Topics in Modern Chemistry
CHEM 345 Biochemistry
CHEM 347 Advanced Topics in Biochemistry

ACS Certified Major in Chemistry

To meet ACS Certification, the student's program must also include CHEM248 (Junior Year) and CHEM 345 or CHEM 223 (Senior Year). The two additional 300-level electives must be chosen from CHEM 341, CHEM 342, CHEM 343, or CHEM 347.

Interdisciplinary Major in Biochemistry

The major in biochemistry is jointly administered by the departments of biology and chemistry and is approved by the American Chemical Society. The rapidly growing field of biochemistry involves the application of biological and chemical concepts and techniques to the understanding of life processes such as the determination of hereditary traits, utilization of energy, propagation of nerve signals, and the molecular basis of physiological and pharmacological phenomena. Biochemists are involved in agriculture, medical research, biotechnology, nutritional research, and other areas at the interface of chemistry and biology. Students majoring in biochemistry will be well equipped for professions in research and industry, as well as the pursuit of graduate study in biochemistry, medicine, genetics, and other related fields. The program consists of a core of chemistry and biology courses beginning in the first year and continuing for the first three years, a choice of two 300-level elective courses in chemistry and/or biology, and a one-year independent study project culminating in a thesis. In addition, there are six prerequisite courses in biology, chemistry, calculus, and physics. The following list of requirements includes both the core and the prerequisite courses. A student may find it convenient to take MATH 120 and/or MATH 121 during the summer. The advanced biochemistry lab, CHEM 347, provides an opportunity to learn more advanced techniques in biotechnology in a fully research integrated environment.

ACS Certified Major in Biochemstry

First Year

BIOL 113 General Biology
BIOL 221 Microbiology
CHEM 111 Introductory Chemistry: Inorganic
or CHEM 113 Principles of Chemistry
CHEM 216 Quantitative Analysis
MATH 120 Calculus I
MATH 121 Calculus II

Sophomore Year

BIOL 225 Cell Biology
CHEM 224 Organic Chemistry I
CHEM 226 Organic Chemistry II
PHYS 112, 113 Fundamentals of Physics

Junior Year

BIOL 337 Molecular Biology
CHEM 331 Thermodynamics and Kinetics
CHEM 345 Biochemistry
300-level elective in biology or chemistry

Senior Year

300-level elective in chemistry or biology

Biochemistry majors do their independent study research either in chemistry with a thesis and an oral defense (CHEM 355) or in biology (BIOL 350). If registered for CHEM 355, biochemistry majors must also register for CHEM 390 Chemistry Seminar.

To meet the ACS standards described above under chemistry major, biochemistry majors must include two additional 300-level chemistry electives chosen from CHEM 341, CHEM 342, CHEM 343, CHEM 347, or CHEM 348.

Joint Major in Environmental Science

Environmental Science is a joint major offered by the Departments of Biology and Chemistry. This major recognizes the importance of environmental problems in the

contemporary world and the expansion of career opportunities as well as graduate programs in this area. Environmental Science is a broad interdisciplinary field working to understand the interactions among physical, chemical, biological, and human factors. A comprehensive understanding of how the environment functions, and the influence of human actions, has the potential for improved conservation, sustainable development, and restoration of natural resources. Concerns about environmental degradations are ever more pressing in the 21st century and have led to a growing demand for specialists in this field as well as programs to train these specialists.

Tracks

There are two tracks within the Environmental Science major: 1) the Environmental Biology Track, which emphasizes both laboratory and field components, as well as broad interdisciplinary alternatives, and 2) the Environmental Chemistry Track, which emphasizes an analytical laboratory approach to environmental problems.

The suggested sequence for core courses is:

Biology Track

First Year

BIOL 113 General Biology (M4)
CHEM 111 Introductory Chemistry: Inorganic
or CHEM 113 Principles of Chemistry
BIOL 104 Introduction to Environmental Science

Sophomore Year

MATH 118 Introductory Statistics
(or MATH227/MATH229)
BIOL 218 Principles of Zoology
or BIOL 221 Microbiology
ECON 100 Principles of Microencomonics
CHEM 112 Introductory Chemistry: Organic
or CHEM 224 Organic Chemistry

Junior Year

BIOL 245 Ecology*
ENVI 201 Environmental Forum**

Senior Year

BIOL 322 Evolution*
PHIL 139 Environmental Ethics*

*Please note these courses are offered every other year. Take care to plan course sequence accordingly.
**This course is offered through the Colleges of the Fenway and may be listed as CR-101

Electives

In consultation with, and approval of, the environmental biology concentration advisor, the student selects a total of five electives in addition to the core courses. Peding approval of the concentration advisor courses not included in this list can be selected as electives if consistent with the student's subfield concentration.

Two electives courses from the Science list (at least one at the 300-level):

BIOL 222 Animal Physiology
BIOL 333 Marine Biology
BIOL 336 Genetics
BIOL 340 Plant Biology
or BIOL 107 Plants and Society
BIOL 345 Tropical Marine Biology (Field study travel)
BIOL 347 Human Development and Genetics
CHEM 216 Quantitative Analysis
CHEM 227 Energy and Global Warming
CHEM 342 Mechanistic Toxicology
HON 308 Sustainability and Global Warming
SURV 150 Overview of Surveying Technology (Wentworth) – GIS skills
MATH 120 Calculus I
MATH 227 Biostatistical Design and Analysis
NUTR 150 International Nutrition Issues
PHYS 110 Introduction to Physics I
PHYS 111 Introduction to Physics II

Three elective courses from the Arts and Humanities course list:

ART 245	American Art
ECON 239	Government Regulation of Industry
ECON 247	Environmental Economics
ECON 145	Economics of Sustainability and Resource Use
HIST 205	Global Environmental History
MGMT 224	Socially-Minded Leadership
POLS 101	Introduction to American Politics
POLS 102	Introduction to International Politics
POLS 217	American Public Policy
POLS 220	International Organization and Law
SOCI 241	Health, Illness, and Society
SOCI 245	International Health
SOCI 267	Globalization

Chemistry Track

First Year

BIOL 113	General Biology
CHEM 113	Principles of Chemistry
or CHEM 111	Introductory Chemistry: Inorganic
CHEM 216	Qualitative Analysis
MATH 120	Calculus I
MATH 121	Calculus II

Sophomore Year

MATH 118	Introductory Statistics
(or MATH227/MATH229)	
CHEM 224	Organic Chemistry I
PHYS 112	Fundamentals of Physics I
PHYS 113	Fundamentals of Physics II

Junior Year

BIOL 104	Introduction to Environmental Science or BIOL 245 Ecology
ENVI 201	Environmental Forum
CHEM 227	Energy and Global Warming
or HON 308	Sustainability and Global Warming
or CHEM 331	Thermodynamics

Senior Year

PHIL 139	Environmental Ethics (2 credits)
CHEM 390	Chemistry Seminar (1 credit)

Electives (8 credits)

Choose two:

CHEM 225	Organic Chemistry II (CHEM 224 is required pre-requisite)
CHEM 341	Advanced Analytical Chemistry
CHEM 342	Mechanistic Toxicology

Independent Learning

This all-College independent learning requirement (8 semester hours) is usually met in the senior year in either the biology department through BIOL 350 Independent Laboratory Research, BIOL 355 Thesis, or BIOL 370 Internship or in the chemistry department through CHEM 350 Independent Study in Chemistry.

Joint Major in Chemistry-Management

The chemistry-management joint major is designed for students who would like to apply their scientific interests to a business career. The major is appropriate for a variety of careers at the interface of the two disciplines, such as sales and marketing specialists for chemical and pharmaceutical companies, business officers in science-based industries or institutions, and scientific information liaisons (e.g., public relations, political advising, and lobbying). The independent learning requirement is ordinarily fulfilled by MGMT 370 Internship (eight semester hours) in a project related to the management or financial aspects of science related organizations, such as science museums or hospital laboratories. These internships are administered by the management program according to the normal procedures of MGMT 370. In rare instances, the independent learning requirement may be fulfilled by CHEM 355 (eight semester hours) or by a non-science related internship in MGMT 370.

First Year

CHEM 111 Introductory Chemistry: Inorganic
or CHEM 113 Principles of Chemistry
CHEM 224 Organic Chemistry
MATH 120 Calculus I
MATH 121 Calculus II

Sophomore Year

CHEM 224 Organic Chemistry I
CHEM 225 Organic Chemistry II
PHYS 112 Fundamentals of Physics I
PHYS 113 Fundamentals of Physics II
ECON 100 Principles of Microeconomics
MGMT 100 Foundations of Business and Management

Junior Year

CHEM 331 Thermodynamics and Kinetics
or CHEM 332 Quantum Mechanics and Molecular Structure
ECON 101 Principles of Macroeconomics
MGMT 110 Financial Accounting
MGMT 234 Organizational Communication and Behavior
MATH 118 Introductory Statistics
(or MATH227/MATH229)

Senior Year

MGMT 250 Marketing
or MGMT 260 Finance
Chemistry elective
Internship/independent study
CHEM 390 Chemistry Seminar

Strongly recommended electives:
MGMT 340 Strategy and the remaining course from MGMT 250 or MGMT 260.

Dual-Degree Program in Chemistry and Pharmacy

Under the provisions of an inter-institutional agreement with the Massachusetts College of Pharmacy and Health Sciences (MCPHS), Simmons College offers a seven-year dual degree program for Simmons students, leading to the BS degree in chemistry from Simmons and the PharmD degree from MCPHS. Interested students should consult the chair of the chemistry department (Gurney) or the chemistry pharmacy advisor (Lee).

Pharmacy is an integral part of the health care community and industry. The PharmD degree, followed by state licensing, leads to a variety of opportunities in community or hospital pharmacy, ambulatory care, long-term care, regulatory agencies, and practice management. The dual-degree program requires one year more to complete than a regular entry-level six-year PharmD but, by adding the BS in chemistry, offers more flexibility in career options, particularly for a student who is interested in research.

MCPHS, a member of the Colleges of the Fenway consortium, is located on Longwood Avenue, one block from Simmons, and accredited by the New England Association of Schools and Colleges and the Accreditation Council on Pharmacy Education. It was organized as a private institution in 1823 to educate men and women in the profession of pharmacy. In addition to the professional PharmD degree, MCPHS offers undergraduate and professional degrees in a number of health-related areas and research-oriented MS and PhD degrees in the pharmaceutical sciences.

The curriculum begins with three full years at Simmons. In the second semester of her third year, a student enrolls for the three-credit course Health Care Delivery at MCPHS and follows the normal MCPHS transfer procedures. In the fourth year, eight semester hours of senior research plus seminar are carried out at Simmons, and an almost full load of coursework in pharmacy is started at MCPHS. The fifth and sixth years are spent entirely at MCPHS, and the pharmacy curriculum is completed in the seventh year with 36 weeks of experiential education.

Students fulfill the degree requirements of both institutions; no degree is awarded until the entire program is complete. At that time, the student receives a PharmD degree from MCPHS and a BS degree in chemistry from Simmons.

Licensure in pharmacy in Massachusetts requires 1,500 hours of internship (practical pharmacy) plus a state board examination.

One thousand hours of the internship are arranged by the student and are paid. The student usually begins the internship with summer or academic- year appointments after transferring to MCPHS. The balance of the internship requirement is met by satisfactory completion of the experiential education during the seventh year. State licensing examinations are generally taken during the summer following graduation.

Students interested in the dual-degree program should talk to the chair of the chemistry department as early as possible in their programs. Students apply for admission to MCPHS during their junior year at Simmons through MCPHS's normal transfer student admission process. Although MCPHS agrees to give qualified Simmons students preference, it is their right to determine final suitability for entry into the professional pharmacy program.

Requirements for the Chemistry major:
(First three years plus independent study)

Year One

BIOL 113 General Biology
BIOL 218 Principles of Zoology
CHEM 111 Introductory Chemistry: Inorganic
or CHEM 113 Principles of Chemistry
CHEM 216 Quantitative Analysis
MATH 120 Calculus I
MATH 121 Calculus II

Year Two

BIOL 221 Microbiology
CHEM 224 Organic Chemistry I
CHEM 225 Organic Chemistry II
PHYS 112 Fundamentals of Physics I
PHYS 113 Fundamentals of Physics II
PSYC 101 Introduction to Psychological Science
COMM 181 Public Speaking and Group Discussion

Year Three

CHEM 331 Thermodynamics and Kinetics
CHEM 332 Quantum Mechanics and Molecular Structure
CHEM 345 Biochemistry
ECON 101 Principles of Macroeconomics
MATH 118 Introductory Statistics
(or MATH227/MATH229)

Year Four

CHEM 355 Independent Study with Thesis

A detailed description of the dual-degree program is available from the Chemistry Department office.

Minor in Chemistry

A minor in chemistry consists of one introductory course (111 or 113), one or two 200-level courses, and one or two 300-level courses. CHEM 112 may be substituted for a 200-level course for the purposes of a minor in chemistry. Minors can be designed to meet the special interests of a variety of students. An environmental interest would be met by the CHEM 111 or 113, 112, 216, 227 and 341 or 342 sequence, math majors could elect CHEM 111 or 113, 112, 216, 332, and 343, biologists could easily obtain a chemistry minor by electing CHEM 111 or 113, 216, 224, 225, and 345. Students in majors constructed from the offerings of two departments (biochemistry, environmental science) do not obtain a minor in either department. No more than one course in the minor should be taken pass/fail.

Minor in Physics of Materials

Please see the description under The Program in Physics.

Minor in Sustainability

The minor is anchored in the Environmental Forum (ENVI 201) and Environmental Ethics (PHIL 139), providing a common experience for all students electing this minor. The selection of elective courses within the minor should be undertaken in consultation with the student's major advisor or another faculty member with an interest in issues of sustainability. The courses should form a cohesive and thematic thread of courses that complement the major. The Environmental Forum is a required two credit course that focuses on

topics related to sustainability and the environment, encourages an active dialog between students and invited expert speakers, and provides an integrative thread to the minor. In addition, this course has a service-learning component that connects sustainability to the community. Environmental Ethics, two semesters of the Environmental Forum, and a total of twenty credits, are required for the minor, with one course from each group below. Note CHEM 221 (Cultural Ecology and Sustainability: Lessons from Iceland) can be used in place of one the Environmental Forum courses.

Scientific Issues

[BIOL 104 Introduction to Environmental Science]
[BIOL 107 Plants and Society]
BIOL 245 Ecology
[CHEM 227 Energy and Global Warming]
[HON 308 Sustainability and Global Warming: Predicting the Future (M3)]

Economic and Political Issues

ECON 247 Environmental Economics
[ECON 145 Economics of Natural Resource Use and Sustainability]
[POLS 217 American Public Policy (M5)]

Social Issues

HIST 205 Global Environmental History (M5)]
[MGMT 224 Socially Minded Leadership (M6)]
[MGMT 229 Corporate Social Responsibility]
[MGMT 348 The Sustainable Supply Chain]
[SJ 220 Working for Social Justice (M6)]
SOCI 321 Sociology of Food
[SOCI 245 International Health]

The courses in [brackets] do not require prerequisites.

Integrated BS/MAT or MS Programs

Integrated programs permit students to obtain bachelor's and master's degrees in less time than it would take to do the programs separately. Students begin the master's degree program during their junior and senior years. The integrated program in education, described under the Department of Education on page 121 helps to fulfill a great unmet need for qualified chemistry teachers at the high school level. The integrated program in chemistry and library and information science leads to a BS in chemistry and a MS in library and information science. Information about this program can be obtained from the chemistry department or from the Graduate School of Library and Information Science. Biotechnology and other private-sector and government research organizations actively seek science information specialists with this combination of qualifications.

COURSES

CHEM 108 Crime Science (M4) (S-1,2)
4 sem. hrs.
Examines the role that the natural sciences play in analyzing physical evidence collected at a crime scene. Students begin by defining science and understanding why the government has placed special qualifiers on scientific expert witnesses. Students will survey the sciences used in a modern crime lab to understand the principles behind the analyses. Three hours lecture, one four-hour laboratory per week. Hebard.

CHEM 110 General, Organic and Biological Chemistry (F-1, 2; S-1, 2; U-1, 2)
4 sem. hrs.
Survey of chemistry. Atomic and molecular structure, solutions, states of matter. Naming of inorganic and organic compounds. Chemical reactions. Structure and function of the biological molecules of life. Nutrition and metabolism. Emphasis on chemistry in a clinical context. Laboratory includes experience with materials and techniques of clinical relevance. Four hours lecture, four hours laboratory per week. This course can not be used as a substitute for CHEM 111 or CHEM 113. Lavoie.

CHEM 111 Introductory Chemistry: Inorganic (M4) (F-1,2; U-1,2)
4 sem. hrs.
Designed for students majoring in nursing, physical therapy, or nutrition. Covers basic concepts with special reference to inorganic compounds, including chemical equations, the periodic table, chemical bonding, and equilibrium. Assumes

no previous knowledge of the subject or sophisticated background in mathematics. Laboratory correlates with and amplifies the lecture material and presents fundamental laboratory techniques, including instrumental methods. Three lectures, one discussion period, and one laboratory per week. Walker.

CHEM 112 Introductory Chemistry: Organic (S-1,2; U-1,2)
4 sem. hrs. Prereq.: CHEM 111 or CHEM 113. Covers nature of the covalent bond, structure of organic compounds, and their reactions and reaction mechanisms. Introduces structure and biochemical functions of compounds important to life. Three hour lecture, and one laboratory per week. For concentrators in paramedical or science-related fields. CHEM 112 is not adequate preparation for CHEM225. Lee, Chen.

CHEM 113 Principles of Chemistry (M4) (F-1,2)
4 sem. hrs. Prereq.: A satisfactory score on the Simmons chemistry placement examination. Provides a quantitative development of a few fundamental topics: connections between chemical behavior and molecular structure, with special reference to molecular modeling, dynamic chemical processes, and energy, entropy, and chemical equilibrium. Emphasizes applications of chemistry to real-world problems. Laboratory introduces quantitative techniques, including instrumental methods, for studying chemical systems. Three lectures and one laboratory per week. Berger.

CHEM 115 Introduction to Chemistry Research
4 sem.hrs. Prereq.: A satisfactory score on the Simmons chemistry placement examination or an AP Score of 4 or 5, or an IB Score of 5, 6, or 7 Introduction to the Chemistry Research Laboratory is a lab-intensive course that introduces students to chemical research skills in a laboratory setting, while building upon the topics of bonding, chemical reactivity, molecular structure, periodic trends of the elements and much more. Upon conclusion of the course, students will have learned how to safely use a variety of lab equipment, develop research plans, conduct experiments to implement the research plan, and write and present a research report. Eight hours of lab per week, lectures on demand. Staff.

CHEM 216 Quantitative Analysis (S-1,2)
4 sem. hrs. Prereq.: CHEM 111 or CHEM 113 or CHEM115.
Presents theoretical principles and experimental practice of quantitative analysis. Topics include solubility, acid-base, redox equilibria and their application in potentiometric, gravimetric, titrimetric, and coulometric methods, spectrophotometry, chromatographic separations, and analytical data evaluation and computer data reduction. Three hours lecture, one discussion period and a four-hour laboratory per week. Berger.

CHEM 221 Cultural Ecology and Sustainability: Lessons from Iceland (TC) (S-1,2)
4 sem. hrs.
Focuses on sustainability through community in one of the most remote, geologically unique, and environmentally friendly countries in the world. Participate in hiking expeditions, conservation and tree planting near Mt. Hekla, Iceland's most active volcano, and living in one of the world's unique eco-villages to understand how this country has committed itself to become more. Berger.

CHEM 223 Introduction to Biochemistry (S-1,2, U1,2)
4 sem. hrs. Prereq.: CHEM 112 or CHEM 224 & CHEM225.
Covers chemical processes in living organisms, with special emphasis on human nutrition. Studies carbohydrates, lipids, proteins, and enzymes, their function in living systems, and their metabolic pathways and regulation. Three lectures per week. Walker.

CHEM 224 Organic Chemistry I (F2)
4 sem. hrs. Prereq.: CHEM 111 or CHEM 113. Covers fundamental concepts of atomic structure, hybridization, molecular orbitals, and structure of organic molecules. Surveys functional groups, classes of organic compounds, and their reactions. Provides in-depth mechanistic study of those reactions, involving energies, stereochemistry, equilibrium, and reaction rate theory. Three hours lecture, two discussion periods, and a four-hour laboratory per week. Gurney & Lee.

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CHEM 225 Organic Chemistry II (F-1,S-2)
4 sem. hrs. Prereq.: CHEM 224.
Extends CHEM 224 to consider additional classes of organic compounds and the more intimate relationship between structure and -reactivity as expressed in mechanistic terms. Three hours lecture, two discussion periods, and a four-hour laboratory per week. Lee & Gurney.

CHEM 227/327 Energy and Global Warming (F1)
4 sem. hrs. Prereq.: Completion of the competency in basic mathematics requirement.
Explores our use of energy and its effect on climate. We will discuss the direct and indirect evidence for global warming and evaluate the importance of human factors. We will evaluate different "models" used by scientists and economists to forecast future impacts of climate change as well as the "true" costs and benefits of energy alternatives. This course will provide you with the facts and tools needed for informed participation in the global warming "debate" as both scientist and concerned citizen. Berger.

CHEM 248 Inorganic Chemistry (F-1,2)
4 sem. hrs. Prereq.: CHEM 113 or CHEM 111 with consent of the instructor.
This course is required for a chemistry degree with American Chemical Society (ACS) certification and focuses on descriptive Inorganic Chemistry. Topics include nuclear and coordination chemistry, theories of bonding, crystal field theory, acids and bases, oxidation-reduction and everyday applications of inorganic chemistry. The Laboratory gives students experience with inorganic synthesis, qualitative analysis, spectroscopy, and characterization of optical and magnetic properties of inorganic materials. Gunn.

CHEM/PHYS 331 Thermodynamics and Kinetics (F-1,2)
4 sem. hrs. Prereq.: CHEM 216, PHYS 113, and MATH 121.
Treats in detail the states of matter and the laws of thermodynamics (with applications to chemical and phase equilibria and electrochemistry) and reaction kinetics and mechanisms. Weekly laboratory studies emphasize the application of concepts developed in the lectures. Kaplan.

CHEM/PHYS 332 Quantum Mechanics and Molecular Structure (S-1,2)
4 sem. hrs. Prereq.: CCHEM 216, PHYS 113, and MATH 12; PHYS201 strongly recommended.
Covers the wave mechanical treatment of atoms, atomic and molecular spectroscopy, theories of chemical bonding, molecular structure, and statistical mechanics. Laboratory work comprises spectroscopic and computer modeling studies. Gunn.

CHEM 341 Advanced Analytical Chemistry (F-1)
4 sem. hrs. Prereq.: CHEM 216.
Examines the theory and practice of selected instrumental methods in analytical chemistry. Covers digital methods in the laboratory with emphasis on data acquisition and the use of computers for extracting information from noisy data. The instrumental methods include mass spectrometry, gas phase and HPLC chromatography, and UV-VIS, IR, NMR, AA and fluorescence spectroscopy. CHEM 341L, the laboratory accompanying the lecture, provides experience with a number of analytical instruments to solve practical as well as research-based problems. Berger & Gurney.

CHEM 342 Mechanistic Toxicology (F-2)
4 sem. hrs. Prereq.: CHEM 225.
Survey of the relationship between chemistry and industrial technology and their impacts on human health and the environment. Investigation of how industrial organizations can address health and environmental issues in the early design stage for products and processes. Within the framework of the twelve principles of green chemistry, case studies of industry/government activities will be analyzed in order to link molecular structure to societal implications. Warner.

CHEM 343 Advanced Topics in Modern Chemistry (F-1)
4 sem. hrs.
Builds on previous work in organic and physical chemistry to explore developments at the frontier of modern chemistry and biochemistry. Covers specific topics chosen based on current developments and the interests of the students and faculty involved and incorporates modern synthetic, instrumental, computer, theoretical, and biochemical methods in the exploration of these topics. Staff.

CHEM 345 Biochemistry (F-1,2)
4 sem. hrs. Prereq.: CHEM 216, CHEM225 and BIOL225 or consent of the instructor.
Covers organizing principles of living systems, structure and function of proteins, sugars, and lipids, mechanism and kinetics of enzymes, introduction to bioenergetics, and integration and control of metabolic pathways. One laboratory per week emphasizes modern instrumentation such as Western blotting, column chromatography, HPLC, and spectrophotometer metric methods. Canfield.

CHEM 347 Advanced Topics in Biochemistry (S-1,2)
4 sem. hrs. Prereq.: CHEM 345.
Covers modern biochemical techniques such as protein expression, protein purification, and enzyme assays. Emphasizes development of independent laboratory skills. Canfield.

CHEM 349 Directed Study (F-1,2; S-1,2)
4 or 8 sem. hrs.
Directed study addresses coursework required for the major or degree not being offered formally that semester. Students work under the close supervision of a faculty member. Consent is required for a directed study, which does not count toward the independent learning requirement. Staff.

CHEM 350 Independent Study (F-1,2; S-1,2)
4 or 8 sem. hrs.
Selection of a research project involving scientific literature search and related laboratory work. Results presented in a research paper and a poster presentation. Staff.

CHEM 355 Independent Study with Thesis (F-1,2; S-1,2)
8 sem. hrs.
Selection of a research project involving scientific literature search, followed by laboratory work required for solution of the problem. Research may be conducted on the Chemistry/Physics Floor or at a local research laboratory in the form of a mentored internship. Results presented in a thesis, oral, and a poster presentation. Students must concurrently enroll in CHEM390. Berger, Canfield, Chen, Gunn, Gurney, Lee, Kaplan, Walker.

CHEM 390 Chemistry Seminar (F-1,2; S-1,2)
1 sem. hr.
Required of all chemistry, chemistry/pharmacy, and biochemistry majors completing CHEM 355. Other interested students are invited to attend. Canfield.

Courses taught through the Colleges of the Fenway

ENVI 200 Environmental Forum [Colleges of the Fenway] (S-1,2)
2 sem. hrs.
Provides a forum for different disciplines and interests to assess current environmental topics. Examines scientific, socioeconomic, and political aspects of environmental issues. Includes a service learning component and encourages interaction with local, regional, and national environmental advocates. Students will develop applied research skills and make oral and written presentations. Staff.

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Program in Children's Literature

Cathryn M. Mercier, *Director and Professor*

CHL 313 Survey of Literature for Children and Young Adults (F-1,2; S-1,2)
4 sem. hrs.
Provides a broad overview of the field of children's and young adult literature, including historical and contemporary considerations, criticism, and representative works from major genres. Sophomore standing. Mercier.

BA/MA in Children's Literature and BA/MFA in Writing for Children

Simmons offers an accelerated program that allows our undergraduate students to acquire the MA in Children's literature or the MFA in Writing for Children within one year of completing their undergraduate studies at the College. The accelerated BA/MA program requires 32 credits beyond the Simmons baccalaureate degree for the MA; the BA/MFA student must complete 28 credits beyond the Simmons baccalaureate degree. Applications should be filed before the beginning of the student's senior year and must include an interview with the program director.

Undergraduate students applying for graduate study in children's literature are expected to have the following qualifications:

1. A grade of B or above in ChL 313 survey of Children's and Young Adult literature.
2. Additional 300-level work that incorporates or addresses children's or young adult literature in some way. For example, an English major could choose to take Victorian Children's Literature as part of her major or begin working on a manuscript for children in a writing course or an education major could provide evidence that her student teaching required extensive work in children's literature. Similarly, a nursing major might find herself heavily involved in bibliotherapy (or other literature activities) in a hospital. A communications major could apply her internship in the children's trade division at a publishing company.

Master of Arts in Children's Literature

The Master of Arts (MA) degree in Children's Literature offers specialized study of books for children and young adults to students who are, or who intend to be, involved in teaching, library work, editing, publishing, writing, affiliated professions, or further research and scholarship in the field.

Master of Fine Arts in Writing for Children

The Master of Fine Arts (MFA) program has a strong theoretical underpinning and grounds the student's creative work in historical, critical, and scholarly contexts. MFA students will develop and complete a creative projects, provide critical feedback to other writers, receive and respond to critical feedback on one's own writing, and revise at least two complete manuscripts in consultation with a mentor.

Department of Communications

Ellen Grabiner, *Chair and Associate Professor*
Bob White, *Professor*
Judith Aronson, *Associate Professor*
James Corcoran, *Associate Professor*
Len Mailloux, *Senior Lecturer*
Judith Richland, *Senior Lecturer*
Andrew Porter, *Lecturer and Internship Director*
Dane Groves, *Multimedia Classroom Manager*
Lydia Hardy, *Assistant Lab Manager*
Yasmin Solomon, *Administrative Assistant*
Additional Teaching Faculty
Sidney Berger

The mission of the Department of Communications at Simmons College is to ensure that students receive a strong liberal arts education while also providing them with strong career preparation. It is an experiential learning environment that encourages students to become lifelong learners committed to excellence. It is an environment that seeks a balance between concepts and theory, and the skills needed to produce media content in any professional setting where people use technology to exchange information. Those settings include business, education, and social services, as well as journalism, broadcasting – TV, radio, and Internet – newspapers, magazines, public relations, advertising, and graphic design. That combination prepares our students for jobs today—and for the jobs of tomorrow— because we know that rapid changes in technology will demand that our students know how to adapt to dramatic changes in their work. It also is an approach that is highly interdisciplinary – drawing from political science and international relations, art, sociology, and cinema and media studies.

Major in Communications

The major in communications focuses on "how people use messages to generate meaning within and across all kinds of contexts, cultures, channels, and media." Meaning generation is central to the work we do in the Department of Communications; that focus is the tie that binds together the concentration areas within the major and the core courses required of all majors. Whether a student is studying journalism, graphic design, public relations and marketing communications, or new media, she is learning how to create meaning. The curriculum also emphasizes media convergence – the intersection and interaction of print, electronic, and digital media – that is at the center of what is going on in the real world. Students are prepared to work across each of these communication platforms. This program of study culminates in advanced coursework and capstone experiences like internships, independent study, and Studio Five — the department's student-run, professional communications workplace. Each student majoring in communications is required to take 40 semester hours of study in the Department of Communications.

Step One: Three courses (12 semester hours)

Step Two: Three or four developmental courses, depending on concentration (12–16 semester hours)

Step Three: Two or three required electives, depending on concentration (8–12 semester hours)

Step Four: Independent learning options (options offered by the department to fulfill the all-College independent learning requirement of 8 semester hours)

Step Five: Senior Seminar/StoryTelling (4 semester hours)

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Step One: The Communications Core Requirements

The major requires three core courses that explore the areas of media and society, writing and editing, visual communication and the

technology currently driving emerging media. A blend of theory and hands-on, practical projects prepares students for further developmental work in one of the department's concentrations of study.

COMM 121 Visual Communication
COMM 122 Writing and Editing Across the Media
COMM 124 Media, Messages, and Society

Students should complete the three core courses by the end of the second year of study in a four-year program. A student should declare her major at the end of the sophomore year. In this recommended sequence, the student would complete the core and then choose a track to declare at this time.

Step Two: Developmental Coursework
The department's academic program comprises four concentrations of study within the Communications major and two joint majors. They are:

- Concentration in Graphic Design
- Concentration in Journalism
- Concentration Media Arts
- Concentration in Public Relations/Marketing Communications
- Major in Web Design and Development (joint major with Computer Science)
- Major in Arts Administration (joint major with Management and Art and Music)

The Step Two developmental coursework has been organized into three or four required courses, depending on concentration, normally taken in sequence. Step Two work can begin during the first two years of a student's program and can be taken concurrently with Step One, provided the student takes the necessary prerequisite core courses.

Step Three: Required Electives
Students will have a list of courses from which to choose between two or three electives depending on concentration. This arrangement allows students optimum flexibility and an opportunity to build competencies across areas of the discipline.

Step Four: Senior Seminar/StoryTelling (Capstone experience)
This capstone course extends the theoretical underpinnings offered in the department while providing students with an opportunity to develop a senior project that reflects their concentration area. The course examines the role of stories in shaping human experience and meaning, the elements that are necessary to create a good story, and the ways that digital technologies disrupt our conventional understanding of how stories are told.

Step Five: Independent Learning Options (Capstone Experiences)
Students majoring in communications have four options to complete the all-College independent learning requirement. Ideally, the student should choose two of the four to complete the independent learning requirement of eight credits. Students may take up to 16 credits of field-based independent credits.

COMM 350 Independent Study
COMM 370 Internship
COMM 380 Field Experience
COMM 390 Studio Five: A Communications Workplace

Departmental Honors

The Department of Communications offers the opportunity for majors to receive departmental honors. Students in Comm 344, Senior Seminar, which is the required capstone for the major, who have a superior record in the major and who receive an A on their senior project and an A in the seminar will receive departmental honors. Student projects will be reviewed and graded by both the faculty member teaching the seminar and at least one additional faculty member in the student's concentration area. The designation of departmental honors will appear on the student's transcript.transcripts.

Departmental Recognition

The Department of Communication does not

offer the designation "departmental recognition." Instead, outstanding students may be named to Lambda Pi Eta, the national honor society for students in communications.

Concentrations in the Communications Major

Graphic Design Concentration

Students may pursue a design concentration focusing on print, web, multimedia, or a combination.

Prerequisites/Requirements Outside the Communications Department

May be taken concurrently with the Communications core.

The following three studio art courses:

ART 111 Introduction to Studio Art: Drawing
ART 112 Introduction to Studio Art: Color
COMM/ART 138 The Poetry of Photography

Plus one of the following courses to satisfy the prerequisite in art history:

ART 141 Introduction to Art History: Egypt to Mannerism
ART 142 Introduction to Art History: Baroque to the 20th Century

Design History at Mass Art or other university with consent of design advisor.

Step Two

Four required courses:

COMM 210 Introduction to Graphic Design
COMM 240 Intermediate Graphic Design I: Typography
COMM 248 Intermediate Graphic Design II: Type and Image
COMM 340 Advanced Design

Step Three

Two electives, at least one at the 300-level:

COMM 244 Design for World Wide Web
COMM 246 Digital Imaging for Design
COMM 262 Media Convergence
COMM 320 Media and the First Amendment
COMM 322 Digital Cultures: Communication and New Media
COMM 328 Special Topics (when appropriate)
COMM 333 Web II: Motion Graphics for the Web

Step Four

COMM 344 Senior Seminar/Storytelling

Journalism Concentration

Students may pursue a writing track in journalism and/or professional writing.

Step Two

Three required courses:

COMM 260 Journalism
COMM 265 Editing Copy and Proof
COMM 320 Media and the First Amendment

Step Three

Three electives, at least one at the 300-level:

COMM 163 Radio Operations
COMM 181 Public Speaking and Group Discussion
COMM 262 Media Convergence
COMM 263 Broadcast Writing
COMM 268 Human Rights in South Africa
COMM 269 Globalization on a Shoestring
COMM 310 Feature Writing
COMM 315 Opinion/Editorial Writing
COMM 322 Digital Cultures: Communication and New Media
COMM 328 Special Topics in Communications (when appropriate)

Step Four

COMM 344 Senior Seminar/Storytelling

Media Arts Concentration

Students may pursue a media arts concentration that combines written, visual, and electronic media.

Step Two

Three required courses:

COMM 120 Communications Media
COMM 210 Introduction to Graphic Design: Principles and Practice
COMM 262 Media Convergence

Step Three

Three elective courses, at least one 300-level:

COMM 163 Radio Operations
COMM 220 Video Production
COMM 222 Animation
COMM 240 Intermediate Graphic Design: Typography
COMM 244 Design for WWW
COMM 246 Digital Imaging for Design
COMM 248 Intermediate Graphic Design II: Type and Image
COMM 260 Journalism
COMM 263 Broadcast Writing
COMM 269 Globalization on a Shoestring
COMM 320 Media and the First Amendment
COMM 322 Digital Cultures: Communication and New Media
COMM 328 Special Topics in Communications (when appropriate)
COMM 333 Web II Motion Graphics for the Web

Web Design and Development (Joint major with Computer Science)

For more information, please see page 107.

Interdisciplinary Major in Arts Administration

For more information, please see page 58.

Interdisciplinary Major in Public Relations and Marketing Communications

The Interdisciplinary Major in Public Relations and Marketing Communications is designed to provide grounding and experience in public relations focused writing as well as a firm understanding on the principles and implementation of marketing strategy. At its best, PR/MarCom education embodies intellectual traditions drawn from a wide range of social and hard sciences, as well as professional and liberal arts areas of concentrations. Students can receive a BA or BS in Pr/MarCom based on electives selected. The Department of Communications houses the major, in collaboration with SOM's Marketing, Operations and Strategy department.

Required Core Courses

COMM 121 Visual Communications
COMM 122 Writing and Editing Across the Media
COMM 186 Introduction to Public Relations & Marketing Communications
COMM 210 Introduction to Graphic Design
COMM 281 Writing for Public Relations & Marketing Communications
COMM 325 Public Relations Seminar
MGMT 100 Foundations of Business and Management
MGMT 230 Why We Buy
MGMT 238 Managing Your Venture's Financial Bottom Line
MGMT 250 Principles of Marketing

Independent Learning: 8 credits to be fulfilled either through Comm 370 (4 or 8 credits), Mgmt 370 (4 or 8 credits), and/or Comm 390 Studio Five; Comm 390 Studio Five cannot be double counted as an elective course and an independent learning course.

Electives

Students select three courses from this list; one must be at the 300 level.

COMM 124 Media, Messages and Society
COMM 163 Radio Operations and Performance
COMM 181 Public Speaking
COMM 240 Intermediate Graphic Design: Typography
COMM 244 Web
COMM 260 Journalism
COMM 262 Media Convergence
COMM 286 Advertising/MGMT 232A Strategic Marketing Communications: Advertising
COMM 310 Feature Writing
COMM 315 Op/Ed
COMM 322 Digital Cultures

COMM 326 Advertising and Copywriting/ MGMT 232B Strategic Marketing Communications: National Student Ad Competition
COMM 333 Motion Graphics
COMM 344 Senior Seminar/Storytelling
COMM 390 Studio Five
MGMT 221 Project Management
MGMT 224 Socially Minded Leadership
MGMT 229 Corporate Social Responsibility
MGMT 231 Creating Brand Value
MGMT 234 Organizational Behavior
MGMT 320 Negotiations and Change Management
MGMT 335 Marketing Research
MGMT 392 Marketing Decision-making

Recommended for the PR/MarCom major are ECON 100 Principles of Microeconomics and PSYC 101 Introduction to Psychological Science.

Minors in Communications

Students who wish to pursue a general minor in communications may do so by completing the three required core courses, along with two electives. Other concentration-specific minors available are:

Graphic Design

Required
COMM 121 Visual Communications
COMM 210 Introduction to Graphic Design
COMM 240 Intermediate Graphic Design I: Typography

Electives for Non-Art Majors – (select 2)
ART 111 Drawing
ART 112 Color
COMM/ART 138 The Poetry of Photography

Electives for Art Majors (select 2)
COMM 244 Web I: Design for the World Wide Web
COMM 246 Digital Imaging for Design
COMM 248 Intermediate Graphic Design II: Type and Image
COMM 262 Media Convergence
COMM 320 Media and the First Amendment
COMM 328 Special Topics (when appropriate
COMM 333 Web II: Motion Graphics for the Web
COMM 340 Advanced Design

Journalism

Required
COMM 122 Writing Across the Media
COMM 260 Journalism
COMM 265 Editing Copy and Proof

Electives (select 2)
COMM 124 Media, Messages, & Society
COMM 262 Media Convergence
COMM 263 Broadcast Writing
COMM 268 South Africa
COMM 310 Feature Writing
COMM 315 Opinion/Editorial Writing
COMM 320 Media and the First Amendment
COMM 322 Digital Cultures: Communication and Social Media
COMM 328 Special Topics (when appropriate)

Media Arts

Required
COMM 120 Communications Media
COMM 121 Visual Communications
COMM 124 Media, Messages, and Society

Electives (select 2)
COMM 210 Introduction to Graphic Design
COMM 220 Video Production
COMM 222 Animation
COMM 244 Web I: Design for the World Wide Web
COMM 246 Digital Imaging for Design
COMM 262 Media Convergence
COMM 320 Media and the First Amendment
COMM 322 Digital Cultures: Communication and Social Media
COMM 333 Web II: Motion Graphics for the Web

Radio

Required

COMM 122 Writing Across the Media
COMM 163 Radio Operations
COMM 263 Broadcast Writing

Electives (select 2)

COMM 124 Media, Messages, and Society
COMM 262 Media Convergence
COMM 269 Globalization on a Shoestring
COMM 320 Media and the First Amendment
COMM 322 Digital Cultures: Communication and Social Media

Web Design and Development: (Joint minor with Computer Science)

Required

CS 112 Introduction to Programming
COMM 121 Visual Communications
COMM 244 Web I: Design for the World Wide Web
CS 321 Web Services and Web-Centric Computing
COMM 210 Introduction to Graphic Design
or CS 333 Database Management Systems

Interdisciplinary Minor in Cinema and Media Studies

A minor in Cinema and Media Studies comprises two required courses and three electives.

Required Courses

ENGL 195 Art of Film
ENGL 221 The Critical Lens: Introduction to Film and Media Theory

Three Electives (select 3)

AST 388 Black Popular Culture
ART/COMM 138 The Poetry of Photography*
ART/COMM 139 Color Photography CSI*
ART/COMM 232 Digital Photography II*
ART/COMM 239 Art of the Real: Documentary Photography*
ART/COMM 237 Advanced Black and White Photography*
ART 249 History of Photography
MUS 165 Music in Film
CHIN 214 Contemporary Chinese Cinema
COMM 120 Communications Media
COMM 121 Visual Communication
COMM 124 Media, Messages, and Society
COMM 222 Animation*
COMM 220 Video Production*
COMM 246 Digital Imaging for Design
COMM 262 Media Convergence
COMM 333 Web II: Motion Picture Graphics for the Web
COMM 344 Storytelling*
ENGL 327 Race and Gender in Psychoanalytic Discourse
ENGL 354 Studies in Film Genre
ENGL 398 Feminist Media Studies
HIST 254 History Through Novels and Films
HIST 329 Film and Historical Representation
PHIL 152 Philosophy Through Literature and Film
SPAN 314 Hispanic Culture as Seen through Film

Restrictions on Electives: One elective must be a production class. (Production classes are designated with an *) In addition, at least one elective must be at the 200- or 300-level. No more than two photography classes will be counted toward the minor.

Post-Baccalaureate Program Leading to a Diploma in Communications

The diploma program can be completed in one year on a full-time basis or over a longer period of time on a part-time basis. It offers graduates of approved colleges an opportunity to pursue post-baccalaureate professional preparation in the field of communications. A typical program requires 32 semester hours of study and typically includes the following courses:

COMM 121 Visual Communication
COMM 122 Writing and Editing Across the Media

COMM 124 Media, Messages, and Society

Five electives (chosen in consultation with faculty advisor; at least one at the 300-level)

Core courses may be waived by the department chair if the diploma student enters with equivalent coursework. Evidence of completion of coursework is required. The student must take additional electives in lieu of the waived core course(s).

COURSES

COMM 120 Communications Media (M1) (F,S)
4 sem. hrs.
Serves as an introduction to communication arts and theory, and the world of still and moving pictures. Involves the analysis of media from the point of view of the audience, and the production of media from the point of view of the communicator. Numerous screenings supplement examples and exercises in film, animation, multimedia, and the graphic arts. The atmosphere of the classroom is a media environment: a comfortable theater supported by light and sound. White.

COMM 121 Visual Communication (M1) (F,S)
4 sem. hrs.
Introduces the concepts of visual culture and visual literacy with an emphasis on looking at looking. From the perspective of consumer and producer of images, the visual experience is deconstructed to illuminate meaning-making practices. Utilizes a variety of theoretical perspectives and approaches to advertising and fine art images, photography, comics, and the graphic novel. Grabiner, Richland.

COMM 122 Writing and Editing Across the Media (F,S)
4 sem. hrs.
Introduces students to the fundamental skills of information gathering, writing, and copy editing for the mass media. Covers AP and other writing styles that students will eventually be expected to master to gain recognition as competent communicators. Includes news stories, press releases, web content, opinion articles, and memos. Corcoran, Mailloux, Porter.

COMM 124 Media, Messages, and Society (M5) (F, S)
4 sem. hrs.
Explores how and why the media reflect, affect, create, and mold public opinions, ideas, and values. Examines issues related to the media and society and the content of print and non-print media in terms of the written and visual messages they convey. Corcoran.

COMM/ART 138 Introduction to Photography and the Traditional Lab (M1) (F, S)
4 sem. hrs.
Teaches the art and craft of contemporary black-and-white photography. Emphasizes how to use a camera, develop negatives, and make prints in order to create images that are visually powerful and significant to the photographer and her audience. Bresler.

COMM/ART 139 Introduction to Photography and the Digital Lab (M1) (F,S)
4 sem. hrs.
Teaches the art and craft of contemporary color photography. Students learn how to use the camera and work with Photoshop to make prints in the digital lab. In addition to learning the basic principles of photography, color theory will be emphasized. Manually adjustable digital or traditional cameras will be used. Bresler.

COMM 163 Radio Operations and Performance (F,S)
4 sem. hrs.
Introduces students to the radio industry and the fundamentals of station operations. Students will learn the history of the medium and the mechanics of station, studio, and equipment operations, as well as acquire skills in digital audio recording, editing, and production that will allow them to create broadcast-quality programming. Mailloux.

COMM 181 Public Speaking and Group Discussion (F,S)
4 sem. hrs.
Involves preparation and presentation of speeches and consideration of the impact of information and communication on listeners. Provides extensive practice in discussion about present-day problems and topics. Emphasizes rhetorical analysis, persuasion, and ethical issues in public speaking.

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COMM 186 Introduction to Public Relations and Marketing Communications (F, S)
4 sem. hrs.
Explores the nature and role of communications in marketing and the integration of public relations, advertising, direct marketing, sales promotion, personal selling, and new media in the marketing communications plan. Analyzes marketing communications materials in various media and considers the economic and social implications of promotion. Includes a field assignment. Porter.

COMM 210 Introduction to Graphic Design: Principles and Practice (M1) (F, S)
4 sem. hrs. Prereq.:COMM 123, plus two of the following; COMM 120, COMM 121, ART 111, ART 112, ART/COMM 138; or consent of the instructor.
Addresses formal principles, process, and production of 2D design. Complements design lectures, demonstrations, and student presentations with studio projects and critiques. Provides tools to develop conceptual skills, master mechanical tools, utilize design-driven software applications; prepare visual, written, and oral presentations, and learn the process and techniques needed to achieve quality design. Involves lecture/lab. Aronson, Richland.

COMM 220 Video Production (M1) (F,S)
4 sem. hrs.
Explores the working methods and production of narrative, personal, documentary, and music video filmmaking. Examines historical examples from Maya Deren to the present, and requires students to plan, shoot, and edit their own short pieces. A course for women who want to make movies, it teaches the variety of conditions that lead to the creation of professional productions. White.

COMM 222 Animation (M1) (F,S)
4 sem. hrs.
Introduces the technology of three-dimensional computer animation, grounded in the history of traditional animation, applied creatively to individual projects. White.

COMM/ART 232 Photography in the Digital Lab II (S)
Prereq: COMM/ART 138.
Teaches the fundamentals necessary for producing dynamic color photographs. Students learn cutting-edge Photoshop techniques geared especially toward photographers, Traditional and digital cameras are used. Examines the work of contemporary color artists through slides, periodicals and field trips to exhibitions. Bresler.

COMM/ART 237 Advanced Photography Workshop
4 sem. hrs. Prereq.: COMM/ART 138.
Emphasizes the making of fine art photographs with attention to the aesthetics of creating photographic images in conjunction with learning advanced exposure and printing technique. Students will work on projects to explore and deepen their ideas. Black-and-white photography in the traditional darkroom. Bresler.

COMM/ART 239 Documentary Photography (F)
4 sem. hrs. Prereq.: ART/COMM 138.
Offers an opportunity to use photography to describe, understand, and interpret the world around us by creating photographic essays on subjects of students' choosing. Gives attention to refining technical skills while delving into aesthetic issues of significance and meaning in our images. Studies the documentary tradition as a basis to develop work. Bresler.

COMM 240 Intermediate Graphic Design I: Typography (F,S)
4 sem. hrs.
Applies the formal principles of design in the context of typography. Topics include type history and terminology, display and text type for print and screen communication, typographic hierarchy in information design, bookmaking, and concept-based design through typographic layout and manipulation. Includes lectures, discussions, class critiques, and computer lab sessions. Aronson, Richland.

COMM 244 Web I: Design for the World Wide Web (F)
4 sem. hrs. Prereq.: COMM 210.
Introduces the essential concepts and tools necessary to produce websites. Includes understanding HTML syntax, authoring web pages, creating and editing web graphics, establishing site hierarchy, and designing information architecture. Requires students to create effective user interfaces, test for usability, and manage the website development process. Grabiner, Groves.

COMM 246 Digital Imaging for Design (S)
4 sem. hrs. Prereq.: COMM 123.
Explores creative approaches to acquiring, manipulating, authoring, and disseminating digital images. In the Adobe CS3 environment, students combine natural and digital media, working iteratively in order to achieve unique solutions to their challenges. In-depth exploration of Photoshop layers, blending modes, masks, and compositing techniques. Students work on stand-alone images and in sequence, for print and web. Grabiner.

COMM 248 Intermediate Graphic Design II: Type and Image (F)
4 sem. hrs. Prereq.: COMM 240 Reinforces the design process and research-based work. Students create professional pieces after careful investigation and analysis. Emphasizes integrating type and image to strengthen a message. Addresses information hierarchy, sequencing, grid development on the computer, and multimedia presentations. Assignments include publications, websites, organization identity programs, and expressive use of typography. Aronson.

COMM/ART 256 Approaches in Contemporary Photography (S)
4 sem. hrs. Prereq.: ART/COMM 138
Expands explorations in photography through self-designed photographic projects. Refines visual and technical skills. Includes two or three long-term projects, critiques, discussion of the work of art photographers, visits to exhibitions, and technical exercises. Bresler.

COMM 260 Journalism (M5) (F,S)
4 sem. hrs. Prereq.: COMM 122.
Immerses students into journalism by covering community issues and events ranging from local and national politics to entertainment and sports. Teaches how to identify news values and make news judgments, as well as acquire note-taking and interviewing skills, understand media ethics and law, and develop news writing techniques. Corcoran, Porter.

COMM 262 Media Convergence (F-1,2; S-1,2)
4 sem. hrs.
Media Convergence is the melding of digital images (still and moving), sound, and typography, to create media for a variety of platforms. This course addresses the rapid changes in media production and distribution and provides hands on knowledge necessary to create, produce, and distribute media. It integrates the study of media history, theory, and design with production skills in film, audio, video, print and digital media—to enable students to advance as media producers. Richland.

COMM 263 Broadcast Writing (S)
4 sem. hrs. Prereq.: COMM 122.
Involves reporting, videotaping, script writing, and videotape editing for the broadcast media. Includes actual news and documentary assignments with production of broadcast news packages utilizing state-of-the-art digital video editing techniques. Mailloux.

COMM 265 Editing Copy and Proof (F,S)
4 sem. hrs. Prereq.: COMM 122.
Teaches how to perceive and correct errors in language written by others. Includes use of professional copyediting symbols and techniques to make needed changes (in spelling, punctuation, word selection, etc.) before the final wording, or "copy," is readied for printing or broadcast. Explains proofreading techniques. Explores basic pre-writing practices, e.g., ranking and organization of raw story data for a news release or letter to the editor. Berger.

[COMM/POLS 268 Human Rights in South Africa*]
4 sem. hrs. Prereq.: COMM 122 or consent of the instructor.]
Explores changes since the country's first multiracial elections in 1994 and the extent to which the society reflects the values of its post-apartheid constitution in the daily life of its citizens, with attention not only to political rights but also to economic and social rights. Students produce publishable articles on their experience. Staff.

COMM 269 Globalization on a Shoestring (S-1,2)
4 sem. hrs. Prereq.: COMM 122 and/or COMM 163.
Gives the student a "virtual study abroad" experience. In conjunction with African University College of Communications (AUCC) in Ghana and schools and participants from around the world, students get to work in a cross-cultural setting using streaming and social media, examining social, cultural, and political issues from a global perspective. Mailloux.

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COMM 281 Writing for Public Relations and Integrated Marketing Communications (F,S)
4 sem. hrs. Prereq.: COMM 122 and 186.
Explores the role and function of public relations and marketing communications materials. Examines techniques of writing and editing for identified target publics. Involves producing marketing communications materials intended for internal and external audiences and analyzing the communications efforts of a publicly traded company. Porter.

COMM 286 Advertising (F)
4 sem. hrs. Prereq.: COMM 124 and 186.
Introduces basic elements of advertising theory and practice with an emphasis on the role of creating effective and results-oriented advertising messages. Analyzes advertising case studies to explore concepts and apply them to real-world examples. Provides tools to develop writing and design skills and to create portfolio samples. Includes a team project to create an advertising campaign for a client of choice. Staff.

COMM 310 Feature Writing (F)
4 sem. hrs. Prereq.: COMM 122 and 260.
Builds upon skills and techniques learned in journalism and other writing courses. Challenges students to think, to see stories in their fullness, and to become involved in their own writing. Teaches a narrative style that encourages critical thinking and engages writers, giving them the foundation to put more human aspects into their stories. Includes class discussion and critique of student work. Corcoran.

COMM 315 Opinion/Editorial Writing (S)
4 sem. hrs. Prereq.: COMM 122 and COMM 260.
Emphasizes persuading readers or at least getting their attention. Develops research skills to defend arguments. Requires subscribing to current newspapers to examine how top columnists craft their commentary. Students produce editorials and columns suitable for publication. Corcoran, Porter.

COMM 320 Media and the First Amendment (F)
4 sem. hrs. Prereq: COMM 122 and 124 or consent of instructor.
Examines the news media's First Amendment rights and responsibilities, addressing libel, privacy, fairness, and objectivity, as well as current media issues. Discusses the ethical and legal ramifications of communications in a democratic society. Corcoran, Mailloux.

COMM 322 Digital Cultures: Communication and New Media (S-1,2)
4 sem. hrs. COMM 124 or consent of instructor.
Communicators are challenged to develop litera- cies and competencies in what currently resembles a whirlwind of perpetually emerging communication technologies. Tracing the trajectory of participatory or "social" cultures, we will investigate the impact of these tools on meaning making practices. A hands-on approach grounds this course and its engage- ment in the long-standing debates in media and cultural theory. Grabiner, Porter.

COMM 325 Public Relations Seminar (F,S)
4 sem. hrs. Prereq.: COMM 186 and 281.
Surveys public relations methods, research, theories, practices, and campaigns. Discusses the ethics and values of public relations as a profession. Includes case study analysis.

COMM 326 Advertising Copywriting and Layout (S)
4 sem. hrs. Prereq.: COMM 286.
Concentrates primarily on creating radio spots, magazine layouts, and television storyboards. Elements of effective advertising are considered, such as drawing attention to the ad, motivating the reader, and building a portfolio through writing and revision. Students provide feedback in a focus group-like setting. Staff.

COMM 328 Special Topics in Communications (F,S)
4 sem. hrs. Prereq: Junior standing or consent of the instructor.
Offers an intense study in a particular area of communications focusing on advanced issues. Staff.

COMM/ART 330 Special Topics in Photography (S)
4 sem. hrs. Prereq: COMM/ART 138 and two additional photography courses or consent of the instructor.
Delves deeply into the practice and theory of photography. General topic is contemporary photography, with readings by Barthes, Sontag, and other theoreticians considered in relation to the work of students and contemporary photographers. Bresler.

COMM 333 Web II: Motion Graphics for the Web (S)
4 sem. hrs. Prereq: COMM 244
Explores the emerging field of information design, investigating several core concepts such as advanced information design, narrative, auditory experience, interactivity, and emotional depth. Examines ways interactive multimedia add meaning to online communication and addresses concepts of a global visual language in which the use of familiar symbols and images transcends spoken language. Grabiner, Richland.

COMM 340 Advanced Design (S)
4 sem. hrs. Prereq.: COMM 240 and 248.
Increases understanding of the designer's role as problem solver and professional design consultant. Introduces responsive design systems. Provides opportunity to create new portfolio-quality work and develop a personal style. Projects include: a personal identity system with professional level résumé and cover letter, prototyping a complex multi-page publication with text, images and info graphic, a website or smart phone app, and a branding system. Aronson.

COMM 344 Senior Seminar/Storytelling (F, S)
4 sem. hrs. Prereq.: COMM 121, COMM 122, COMM, 124 and concentration requirements.
Storytelling is perhaps the oldest, most salient form of entertainment, education and enlightenment that humans have engaged in. The course examines the role of stories in our lives, the elements that are necessary to create a good story, and the ways that digital technologies disrupt our conventional understanding of how stories are told. Students will complete a major project in the course using storytelling techniques and demonstrating their understanding of the different modes of communication. Staff.

COMM 350 Independent Study (F, S, U)
4 sem. hrs. Prereq.: Consent of the department chair. Staff.

COMM 370 Internship (F, S, U)
4–8 sem. hrs. Prereq.: Junior or senior standing, declared major in communications, consent of the instructor, and application filed by Oct. 15 for spring semester or March 15 for summer or fall semesters. Porter. Senior standing required for eight semester hours.

COMM 380 Field Experience (F,S)
4 sem. hrs.
An eight to 10 hours-per-week field placement in the Greater Boston area, based on the student's background and interests, available to students who have already completed COMM 370. Students must apply before October 15 for spring semester. Porter.

COMM 390 Studio Five: A Communications Workplace (F,S)
4 sem. hrs. Prereq: Completion of the communications department core and track requirements or consent of the instructor.
Provides a faculty-supervised workplace where students undertake projects for nonprofit clients while working as collaborative teams. Requires analyzing client communications needs and providing optimal solutions on budget and deadline. Integrates relevant issues of agency/client relationships, vendor relation and project management. Porter, Richland.

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Program in Computer Science and Informatics

Nanette Veilleux, *Professor, Program Director*
Margaret Menzin, *Professor*
Bruce P. Tis, *Associate Professor*
Amber Stubbs, *Assistant Professor*

The Program in Computer Science and Informatics offers majors and minors in computer science, information technology, web design and development, health informatics and scientific computation (minor). Our program prepares women for technology-related careers in the global marketplace, for graduate school, and to be knowledgeable, ethical and socially conscious adopters of technology. We also serve the Simmons community by offering service courses to address both the general and specific technology fluency needs of our students. These courses help the student gain an overview of technology— its use, application, and limitations and can serve as stand-alone courses or as a starting point for more advanced study in one of our four technology areas. We often find that students have a latent interest in, and talent for, technology that blossoms in these courses.

Students may also complete an eight-credit internship where they relate theory learned in class to the actual needs of the workplace. Students have completed internships in industry, government, nonprofits, and academic institutions such as Fuji Film Microdisk, Northeastern University, Raytheon, IBM/Lotus, Hyperactive Multimedia, Meditech, TechSoup Global, Screened Images Multimedia, UPS Field Services, Eduventures, Highrock Covenant Church, Windsor School, Partners Healthcare Information Systems, and CakeWalk. Students are frequently offered permanent jobs upon graduation at the company that sponsored their internship. Our job placement rate upon graduation is very high.

Students opportunity to complete significant independent study projects under the guidance of a faculty member, as well as participate as a member of a research team on NSF-funded research projects. While our courses and majors have a strong technology focus, they also stress teamwork, collaboration, communication, and the development of leadership skills. All courses include a structured laboratory experience with students often solving problems in groups. Our students often double major in areas such as communications, English, education, mathematics, philosophy, Spanish, and management. Our alums work for companies developing educational software, medical support, gene research to cure cancers, research to ensure that voting machines cannot be hacked, and writing software to help nonprofits survive.

At Simmons College we help young women find their voices. We prepare them to be leaders in the world and this world needs women in computer science and information technology more than ever.

Major in Computer Science

The demand for computer scientists in the workplace remains strong. New and exciting problems are there to be solved. Students that major in computer science develop new technology, as well as apply advanced technology to solving highly technical problems at the forefront of technology. They learn to think critically, logically, and abstractly. They gain both an understanding of the underlying theory and concepts of computing as well as the facility to integrate theory with practice. They are problem solvers. Students take both foundational courses and advanced technology courses that focus on systems and technology development. Students are prepared for careers in programming, web development, system support, network administration, database design, computer and network security, applications development, and software engineering. The program also provides academically outstanding and highly motivated majors the opportunity to produce a rigorous thesis as the culmination of a two-semester

project, beginning with a preparatory semester of related independent research.

Requirements: A major in computer science requires the following courses:

CS 112 Introduction to Computer Science
CS 113 GUI and Event-Driven Programming
CS 226 Computer Organization and Architecture
CS 227 Computer Networks
CS 232 Data Structures and Algorithms
CS 330 Structure and Organization of Programming Languages
CS 345 Operating Systems
MATH 210 Discrete Mathematics
PHIL 225 Ethical, Legal, and Social Issues in Information Technology
One mathematics course numbered MATH 118 and above

Electives (choice of three)

CS 321 Web-Centric Programming
CS 327 Cybersecurity
CS 333 Database Management Systems
CS 334 Special Topics in Computer Science
CS 343 or LIS 486 Systems Analysis
LIS technology courses as approved

Honors in Computer Science

The Honors designation will be given if a student has:

• Demonstrated academic achievement by earning a GPA of 3.5 or greater in courses taken at Simmons for the major
• Conducted research as demonstrated by successfully completing of one of the following:
o NSF-REU
o Honors Thesis
o Research Project deemed to be honors-worthy by the program faculty

Minor in Computer Science

Computing technology pervades our experience, both in the workplace and in our personal lives. An understanding of technology and its application, as well as the development of strong technical problem solving skills is valuable to every undergraduate. Students from a wide range of majors frequently minor in computer science. Students choose from the following options:

Requirements:

Web Development

This option provides a strong technical background for anyone wishing to develop web-based applications. Students will learn HTML, JavaScript, Java, and database design and implementation, as well as the network infrastructure upon which web applications are built, including security considerations. The curriculum includes:

CS 112 Introduction to Computer Science
CS 227 Computer Networks
CS 327 Cybersecurity
CS 321 Web-Centric Programming and Web Technologies
CS 333 Database Management Systems

Software Development

This option provides an introduction to software development and programming. It is appropriate for anyone considering a major in computer science or interested in application programming. The curriculum includes:

IT 101 Living in a Digital Society
CS 112 Introduction to Computer Science
CS 113 GUI and Event-Driven Programming
CS 232 Data Structures and Algorithms
CS 321 Web-Centric Computing and Web Technologies

Systems

This option prepares the student to perform user support, system administration, or network administration, and develops the technical expertise needed in many small offices and organizations today. The curriculum includes:

CS 112 Introduction to Computer Science
CS 226 Computer Organization and Architecture
CS 227 Computer Networks
CS 345 Operating Systems
CS 327 Cybersecurity

And one additional CS course other than CS 111

Open

A custom-designed minor consisting of five courses may be proposed by the student to achieve her specific goals. Faculty members are available to help the student design this minor. The computer science and information technology faculty must approve the final proposal.

Major in Information Technology

For students interested in the assessment of users' technology needs, and the evaluation, application, administration, and support of technology, we offer a major and minor in information technology. The major provides students with a solid technical grounding in computer science and information technology, as well as education in the "soft" interpersonal skills of communication, teamwork, critical thinking, and ethical decision-making that are vital to the IT industry. An information technologist determines user needs and then develops, manages, and supports technology based solutions. Students take courses in communication, management, philosophy, and computer science and information technology. Students are prepared for a broad range of careers such as web content provider/manager, web developer, web administrator, IT consultant, network support, customer/desktop support, system integrator, system analyst, and application developer.

CS 112 Introduction to Computer Science
CS 113 GUI and Event-Driven Programming
CS 227 Computer Networks
CS 333 Database Management Systems
CS 321 Web-centric Computing and Web Technology
CS 327 Cybersecurity
IT 343 or LIS 486 Systems Analysis

Mathematics

MATH 210 Discrete Mathematics
or MATH 118 Introductory Statistics

Philosophy

PHIL 225 Ethical, Legal, and Social Issues in Information Technology

Communications

One of the following:
COMM 120 Communications Media
COMM 121 Visual Communication
COMM 122 Writing and Editing Across the Media
COMM 181 Public Speaking and Group Discussion

Management

MGMT 234 Organizational Communication and Behavior

Three courses from an application domain, such as management, the sciences, communications, education etc, or a minor in another discipline are strongly suggested.

Minor in Information Technology

The minor in information technology provides the technology skills and understanding required of every professional in today's workforce. You gain an excellent grounding in technology –an overview of technology and web applications, a familiarity with a modern programming language; the ability to design, create and use a database, a grasp of management issues, and the ability to sharpen your communication skills. This minor is a nice complement to any major at Simmons.

Requirements:

IT 101 Living in a Digital Society
CS 112 Introduction to Computer Science
CS 333 Database Management Systems
Choose two of the following courses:
COMM 120 Communications Media
COMM 121 Visual Communication
COMM 122 Writing and Editing Across the Media
COMM 181 Public Speaking and Group Discussions
MGMT 234 Organizational Communication and Behavior
PHIL 225 Ethical, Legal, and Social Issues in Information Technology

Major in Health Informatics

Health Informatics is the application of the computing and information technology disciplines to solving problems in the field of health care. This interdisciplinary major includes foundation courses in technology, as well as more advanced topics such as security, database management, web applications development, and systems analysis. Students also learn about the health care industry by taking courses such as health informatics, biomedical ethics, and the health industry market and business model. Electives include courses in sociology, biology, and management. The major also provides experiential learning in the health care industry through two experiential placements that will expose our students to both the neediest and to the most sophisticated ends of the health care spectrum. Students graduating in this major would be desirable in IT departments at hospitals and other medium-to-large health care settings, and in companies developing software for the health care industry. There will also be positions in maintaining, modifying and managing software services.

Required Courses

CS 112 Introduction to Computer Science
CS 113 GUI and Event-Driven Programming
IT 225 Health Informatics
MATH 118 Introductory Statistics
CS 227 Computer Networks
CS 327 Cybersecurity
CS 333 Database Management Systems
CS 321 Web Centric Programming and Web Technologies
IT 343 or LIS 486 Systems Analysis
PHIL 131 Biomedical Ethics

One of the following:

SNHS 450 The Health Care Systems: Interdisciplinary Perspectives
MGMT 120 Introduction to Health Systems
MBAH 448 Health Care IT (with permission of instructor)

Independent Learning: To be satisfied in the IT department of a hospital, HMO or at a company which develops software for the health care industry.

Electives

Students are strongly urged to select two or more of the following, depending of their specific interest and in consultation with their advisors:

SOCI 241 Society and Health
BIOL 346 Epidemiology
MATH 227 Biostatistical Design and Analysis
MGMT 110 Financial Accounting
MGMT 100 Foundations of Business and Management

Students should also consult with their advisors about the possibilities of a minor in Biology, Management, or Public Health.

Minor in Scientific Computation

The minor in scientific computation deals with the processing of large sets of "messy data". A must for anyone planning on attending graduate school.

MATH 118 Introductory Statistics
MATH 343 Mathematical Modeling
CS 112 Introduction to Computer Science
CS 333 Database Management Systems

A fifth course to be chosen from:

CS 226 Computer Organization and Architecture
CS 113 GUI and Event-Driven Programming
MATH 227 Biostatistical Design and Analysis
MATH 338 Probability
MATH 225 Differential Equations

Major in Web Design & Development

Joint major with the Communications Department.

The World Wide Web has driven a need for web designers and developers. People who understand both the art and the science of web development are particularly valued. Graduates will have a firm understanding of the principles of design as well as an understanding of the

technical issues involved in the development of an active web site. Students graduating from this major will have an advantage over traditional web designers because they will have a clear understanding of the elements of web development. Likewise, the students will also have an advantage over traditional web developers because they will possess knowledge of the elements of design.

This major combines existing classes from the Communications and Computer Science programs to create a cohesive major in Web Design & Development. It seeks to draw students who are interested in integrating the two facets of web site creation rather than focusing on either the Graphic Design concentration or the Computer Science major.

Requirements

Step One: Core
The core classes focus on providing students with a foundation for the other steps in their major.

COMM 121 Visual Communication
COMM 210 Introduction to Graphic Design
CS 112 Introduction to Computer Science

Step Two: Developmental

COMM 240 Typography
COMM 244 Web 1: Design for the World Wide Web
CS 113 GUI and Event-Driven Programming
CS 321 Web-Centric Computing and Web Technologies

Step Three: Electives. Students take three electives, not all from the same discipline.(CS/COMM)

CS 227 Computer Networks
CS 327 Cybersecurity
CS 333 Database Management Systems
COMM 340 Type and Image
COMM 348 Advanced Design.
IT 343 Systems Analysis & Design.
COMM 333 Web II: Motion Graphics.

Step Four: Senior Seminar Core

COMM 395 Senior Seminar.

Step Five: Independent Learning

Students may choose to take independent studies and internships from either the Communications department or the Computer Science program. This will depend on the nature of the independent study or internship. Students may also opt to take COMM 390: Studio 5 for their independent learning requirement.

Degree options: With the approval of her advisors, a student may choose whether to graduate with a Bachelor of Arts or of Science, depending on which discipline she has chosen the preponderance of her course work.

Please keep in mind that this major will not function as simply a Communications concentration because the core classes do not meet the requirements for the Communications core. This major is also not designed as a replacement for the Graphic Design concentration, as students graduating from the major will not receive the entire breadth of the design curriculum or the Communications core. Likewise, it is not a Computer Science major; students will not be exposed to the breadth of the CS field and would need additional courses to move into other application areas.

Interdisciplinary Minor in Web Design and Development:

Required

1) CS 112 Introduction to Computer Science
2) COMM 121 Visual Communications
3) COMM 244 Design for the World Wide Web
4) CS 321 Web Centric Programming and Web Technologies
5) Either COMM 210 Introduction to Graphic Design OR CS 333 Database Management Systems

Technology and Management

There is a growing need for the application of technology in the global marketplace. We encourage our computer science and information technology majors to minor in management. They can complete in a minor in

business metrics, finance, leadership, management, marketing, or retail management, which will be invaluable as they enter the workforce.

Integrated B.S/MS Programs

Two integrated programs permit students to obtain their BS and MS degrees in less time than it would take to do the programs separately. Students begin the MS degree program during their junior year. The integrated program in education is described under the Department of Education on page 121. Information about the integrated program in computer science and library and information science is available from the program in Computer Science and Informatics or from the Graduate School of Library and Information Science.

3+1 B.S. in Computer Science/M.S. in Library and Information Science

The world of library and information science is changing –fast. No longer just a home for printed texts, a "library" is any place where creating, storing, and accessing traditional print and emerging digital resources come together.

This evolution is huge, and the vast array of careers it is creating calls for a new breed of highly trained, technologically savvy information professional. The 3+1 Computer Science/ Library and Information Science Program will thoroughly prepare you to meet this opportunity.

Pairing a Bachelor of Science in Computer Science with a Master in Library and Information Science, this sought-after combination will give you a versatile technical background, as well as advanced knowledge of the principles, theories, and practices of modern librarianship, digital curation, and content management.

You will earn your computer science degree in three years in an empowering, state-of-the-art environment. Through coursework and hands-on learning, you will develop your ability to understand computing foundation and theory and to solve real-world problems through the application of technology.

Master's level coursework in library science will commence by your senior year and culminate in stimulating yet practical independent studies. Our Graduate School of Library and Information Science (GSLIS) is ranked in the country's top 10 by U.S.News & World Report. The faculty are recognized leaders in their fields, while our prime Boston location opens the door to hundreds of prestigious internships.

COURSES

[CS 111 The Science of Sound and Image Media (M4)
4 sem. hrs. S15.]
Examines, through lecture and laboratory exercises, the physical realization of sight and sound and what adaptations must be made to create digital sound recordings, both of speech music, and digital photographs and movies from these sensory inputs. Veilleux.

CS 112/412 Introduction to Computer Science (M3) (F)
4 sem. hrs. Prereq.: Completion of the competency in basic mathematics.
Introduces computer science and programming using a high-level programming language (currently Python). Teaches program design in the context of contemporary practices both object oriented and procedural. Presents fundamental computer science topics through initiation and design of programs. Requires significant projects. Veilleux, Tis.

CS 113/413 GUI and Event-Driven Programming (S)
4 sem. hrs. Prereq.: CS 112.
Continues CS 112, with emphasis on graphic user interface and event-driven programming (currently Java). Requires significant projects. Veilleux, Tis.

CS 226/426 Computer Organization and Architecture (M3) (F15)
4 sem. hrs. Prereq.: CS 112 or equivalent or consent of the instructor.
Studies the structure and function of computer hardware, with an emphasis on performance. Includes history of computers, information representation, hardware components and their

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functions, buses, internal and external memory, input/output, CPU, and instruction sets. Tis.

CS 227/427 Computer Networks (F14)
4 sem. hrs. Prereq.: CS 112 or consent of the instructor.
Introduces the concepts, design, implementation, and management of computer networks. Covers data communication concepts, layered architectures, protocols, LANs, WANs, internetworking, the Internet, Intranets, network management, and network applications with an emphasis on TCP/IP. Tis.

CS 232/432 Data Structures and Algorithms (F)
4 sem. hrs. Prereq.: CS 113. Coreq.: MATH 210.
Considers topics including abstract data types and objects, strings, vectors, linked lists, stacks, queues, deques, sets, maps, trees, hash tables, and applications of data structures. Surveys fundamental algorithms, including geometric algorithms, graph algorithms, algorithms for string processing, and numerical algorithms. Discusses basic methods for the design and analysis of efficient algorithms. Tis, Veilleux. Stubbs.

CS 321/521 Web-Centric Computing and Web Technologies (F14)
4 sem. hrs. Prereq.: CS 112
Provides knowledge of the current web technologies, including both client- and server-side technologies, AJAX, and mash-ups. Offers in-depth study of web architectures, web page creation using the standard HTML5, CSS and JavaScript with jQuery, AJAX, and server-side Perl. Studies XML and design of XML schemas and XPath/XSLT. Web services are also examined, including SOA, UDDI, WSDL, SOAP.
Menzin.

CS 327/527 Cybersecurity (S15)
4 sem. hrs. Prereq.: CS 227.
Addresses tthe need for authentication, confidentiality, and integrity of data in a networked environment. Examines the services and mechanisms currently available to prevent successful attacks. Includes security models, encryption, digital signatures and certificates, authentication techniques, email confidentiality, firewalls, web servers, malware, and security management strategies. Tis.

CS 330/530 Structure and Organization of Programming Languages (S)
4 sem. hrs. Prereq.: CS 232, CS 226 or consent of instructor.
Provides a comparison of computer languages and language paradigms (object-oriented, procedural, functional, event-driven) with respect to data structures, control structures, and implementation. Investigates these issues in several languages (currently JAVA, C++, Perl, Ruby, and Scheme). Presents formal language specification including regular, context-free, and ambiguous languages. Veilleux, Stubbs.

CS 333/533 Database Management Systems (S16)
4 sem. hrs. Prereq.: CS 112.
Offers comprehensive examination of the design and implementation of relational database management systems (DBMS). Teaches the logical organization of databases, E_R design, normalization and use of SQL for data description and retrieval, including triggers and stored procedures, concurrency and security issues, and typical solutions. Includes a major project building web interfaces to databases using PHP and MySQL. Introduction to No_SQL solutions. Menzin, Veilleux, Tis.

CS 334 Special Topics in Computer Science
4 sem. hrs. Prereq.: Junior standing or consent of the instructor.
Offers an intensive study in a particular area of computer science focusing on advanced issues. Intended for juniors and seniors concentrating in computer science. Topic varies but may include natural language processing, advanced networking, system/network management, systems programming, network programming, server-side programming and issues, cryptology, and wireless technologies. Staff.

CS 343 Systems Analysis and Design (S15)
4 sem. hrs. Prereq.: One of MGMT 110, CS 333 and IT 101 or CS 112.
Teaches the strategies used in designing a complex computer-based application system: identifying stakeholders, gathering information, writing requirements, analyzing for technical and financial feasibility, setting priorities, planning and managing projects, and designing for usability. Includes extensive use of cases and UML for in depth examples. Involves team projects. Menzin.

CS 345/545 Operating Systems (F14, S16)
4 sem. hrs. Prereq.: CS 226 and CS 232.
Teaches the function, design, implementation, and management of operating systems, including detailed study of the UNIX/Linux system. Topics include concurrent processes, operating system architecture, memory management, I/O, the file system, resource allocation, scheduling, security, concurrency command processing, and shell programming. Tis.

CS 349 Directed Study (F, S)
4 sem. hrs. Prereq.: Consent of the instructor.
Directed study addresses coursework required for the major or degree not being offered formally that semester. Students work under the close supervision of a faculty member. Consent is required for a directed study, which does not count toward the independent learning requirement. Staff.

CS 350 Independent Study (F, S)
4 sem. hrs. Prereq.: Consent of the instructor.
Requires a written proposal, regular meetings with faculty advisor, a final presentation, and a written report. Staff.

CS 355 Honor Thesis (F, S)
4 sem. hrs. Prereq.: Consent of the instructor beginning with the successful completion of CS 350.
Provides academically outstanding and highly motivated majors the opportunity to produce a rigorous thesis as the culmination of a two semester project, following a preparatory semester of related independent research. Includes oral defense with members of the department and a written thesis. Staff.

CS 370 Internship (F, S)
4 or 8 sem. hrs. Prereq.: Junior or senior standing and consent of the department. Staff.

IT 101 Living in a Digital Society (M3) (F, S)
4 sem. hrs.
Teaches the skills and concepts needed to use, understand, and evaluate information technologies. Students will learn to use current technology confidently, and will know how to effectively adapt to inevitable changes. Word, image, sound processing, spreadsheet and database applications, search techniques, and web design as well as the social ramifications of technology are explored. Students gain an understanding of computer hardware and networks in order to make informed purchasing, configuration, installation, and maintenance decisions. Veilleux, Tis.

IT 225/525 Health Informatics (M3) (F,S)
4 sem. hrs. Prereq: Completion of the competency in basic mathematics.
Introduces students to major uses of information technology in the health care industry. Studies components of a computer system and major health informatics applications, how a database is organized, and general issues such as consistency, concurrency, back-up, security, integrity, and recovery from failure. Use of Access and introduction to SQL. Teaches how to model health care problems on Excel. Introduction to Electronic Health Records and underlying technologies and standards (XML and UML), Finding and evaluating on-line health information. Menzin.

IT 350 Independent Study (F, S)
4 sem. hrs. Prereq.: Consent of the instructor. Staff.

IT 370 Internship (F, S)
4 or 8 sem. hrs. Prereq.: Consent of the instructor.
Computer science courses offered at the 400- and 500-level are available to GSLIS students. These courses include additional work at the graduate level. Staff.

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Program in East Asian Studies

Alister Inglis, *Director, Associate Professor of Modern Languages and Literatures*
Zachary Abuza, *Professor of Political Science and International Relations*
Zhigang Liu, *Associate Professor of History and Modern Languages and Literatures*
Shirong Luo, *Associate Professor of Philosophy*
Niloufer Sohrabji, *Associate Professor of Economics*

The major in East Asian studies (EAS) is designed to provide students with knowledge and understanding of East Asia, a region that has become increasingly significant in the post-Cold War era. Students acquire this knowledge by studying an East Asian language as well as courses in other disciplines, including art history, economics, film studies, history, literature, philosophy, political science, religion, and sociology. The major prepares students for further growth along a variety of paths beyond college, including graduate study, careers in education, employment overseas or in business and institutions specializing in East Asia, and service within and to the Asian American community.

A minor in East Asian studies allows students to enhance their major academic program with an understanding of the history, politics, and culture of East Asia. A minor does not require language courses.

Major in East Asian Studies

Requirements: Students must take five elective courses from the EAS curriculum, including at least one of either HIST 201, HIST 202, or HIST 206. No more than three courses may be taken in any one department.

EAS Curriculum

(20 semester hours)

ART 252	Arts of China and Japan
CHIN 214	Topics in Contemporary Chinese Cinema
CHIN 202	Intermediate Chinese II
CHIN 245	Advanced Intermediate Chinese I
CHIN 246	Advanced Intermediate Chinese II
CHIN 250	Masterpieces of Traditional Chinese Literature
CHIN 260	Chinese Calligraphy: Alternate Body Building
CHIN 310	Chinese Civilization: Past and Present
ECON 222	Comparative Economies of East Asia
HIST 201	The Dynamics of Japanese History
HIST 202	Asia to the 18th Century
HIST 203	History of East Asian and U.S. Foreign Relations
HIST 204	Japanese Culture: Gender, Family, and Society
HIST 206	The Rise of Modern China
HIST 207	Gender, Family, and Society in Modern China
HIST 362	Seminar: Reforms and Revolutions in Asia
HIST 364	Seminar: The Rape of Nanjing
HONS 208	Art of Dissent
HONS 211	Balance, Harmony, and Happiness: A New Look at Classical China
JAPN 202	Intermediate Japanese II
JAPN 245	Composition and Conversation
JAPN 310	Japanese Civilization
JAPN 320	Newspaper Kanji and Translation
JAPN 325	Japanese Fables and Onomatopoeia
PHIL 133	Asian Philosophy
PHIL 390	Seminar on Buddhism
POLS 225	International Politics of East Asia
POLS 241	The Dragon Ascending: Politics and Policy Making in Contemporary China
POLS 245	Politics of Newly Industrializing Countries
SOCI 267	Globalization

Language Courses (20 semester hours)

Students are required to study a single East Asian language offered at Simmons for five consecutive semesters. Courses taken to fulfill this part of the requirement, therefore,

cannot also count among the five electives from the EAS curriculum. Students who enter the Program with at least an intermediate knowledge of an Asian language may satisfy the requirement by completing five semesters' continued study of either the same or another Asian language once correct placement has been determined. Alternatively, in special cases pending the Director's approval, the student may complete five additional courses from the EAS curriculum. Students who enter Simmons with an understanding of an Asian language below the intermediate level can satisfy the language requirement by study that would raise their competence to that of advanced intermediate in addition to either further language courses or those from the EAS curriculum.

Capstone Cross-Cultural Experience
(8 semester hours)

This requirement consists of two phases:
1. Study abroad or community-based learning.

To encourage cross-cultural experience, students complete four semester hours through either study abroad or community-based learning within an Asian American community. Students should have adequate language preparation and a significant portion of coursework completed before undertaking this experience. Thus, most students will satisfy this requirement during the junior or senior year. The precise timing will be decided in consultation with the student's advisor. Alternatively, the student may undertake an independent study with an EAS faculty member that would culminate in a research paper on a topic of the student's own design. 2. Integrative Seminar.

Successful completion of either EAS 390 or, when not offered, an alternate course is mandatory for all students in the major. In this seminar, the student will produce either a research paper or some form of creative work associated with a special interest. The nature and scope of the project will be collaboratively determined with the seminar instructor and/or their advisor. HIST 364 and 362 will be offered in lieu of the Seminar for 2015-16.

Honors

Honors in East Asian Studies requires a minimum GPA of 3.67 for EAS courses in addition to a grade of A or A- for the senior term-paper; i.e., the paper produced as part of the course work for either EAS 390 or 350.

Minor in East Asian Studies

A minor in East Asian studies consists of five courses from the EAS curriculum. No more than three courses may be taken in any one department.

COURSES

EAS 349 Directed Study (F, S)
4 sem. hrs. Staff.

EAS 350 Independent Study (F, S)
4 sem. hrs. Staff.

EAS 370 Internship (F, S)
4–8 sem. hrs. Staff.

EAS 380 Fieldwork
4 sem. hrs. Prereq.: Consent of the department.

[EAS 390 Integrative Seminar
4 sem. hrs. Prereq.: Consent of the department. Not offered in 2014–2015.]

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Department of Economics

Masato Aoki, *Chair and Associate Professor*
Donald Basch, *Professor Emeritus*
Carole Biewener, *Professor*
Zinnia Mukherjee, *Assistant Professor*
Barbara Sawtelle, *Professor Emerita*
Niloufer Sohrabji, *Associate Professor*
Mark Valentine, *Administrative Assistant*

Decision-makers at all levels of business, government, and the nonprofit sector frequently evaluate complex economic issues, while intelligent citizenship makes increasing demands on an individual's knowledge of economics. Also, the analytical tools of economics are increasingly important to studies of health care and educational systems, the environment, sustainable resource use, gender and racial inequality, technology, economic policy, international relations, economic justice, and other domestic and global issues of public and private life.

The major in economics provides students with an excellent background for careers in finance, industry, government, and the nonprofit sector. In addition, it prepares students for graduate work in many disciplines, including economics, law, business, and public policy. Economics majors develop institutional knowledge about the business world, the domestic and global economic environment in which businesses, households, and communities operate, and the governmental policies that affect businesses and workers. Further, economics majors develop the ability to analyze complex economic and social issues and to communicate the results of their analysis through writing and oral presentation.

The Economics Department annually offers the Econnect program, a series of interactive programs aimed at helping students successfully transition to careers or graduate study. Now in its fifteenth year, Econnect features the annual Economics Student-Alumnae Networking Dinner, at which over fifty Economics graduates engage in structured and friendly networking with current students who are equipped with a networking directory of participating alumnae, student-customized "business cards," and basic training in networking skills. Outcomes include job offers, first interviews, internships, lessons in effective networking practices, advice about graduate programs, and networking beyond the Simmons community. In other Econnect activities, alumnae participate in skill-development workshops in interviewing, negotiating, and LinkedIn. The Department's Internship program further supports the student's exploration of career interests and provides practice in interviewing, résumé preparation, networking, and professional behavior.

The two-course introductory sequence (ECON 100 & 101) provides students with conceptual frameworks for understanding and evaluating the U.S. economy from theoretical, historical, and global perspectives. Intermediate microeconomics and macroeconomics (ECON 200 & 201) rigorously present major theoretical approaches and their analytical applications and policy implications. Economics electives (ECON 124 through 393) extend theoretical and empirical analyses to various aspects of the U.S. and international economies. ECON 393 applies mathematical principles and statistical techniques to the analysis of economic issues. The department's internship supervisor places students in internships (ECON 370) where they develop and apply their skills and knowledge in a professional, research, or policymaking setting. The senior thesis (ECON 355) challenges intellectually ambitious majors to propose, research, and write a defensible thesis; the thesis is the culminating product of a two-semester project and prepares students for graduate-level work, and qualifies the student for consideration for honors in economics. Economics is complemented by other fields of study in the liberal arts and sciences and in the professional areas. According to their individual interests, strengths, and priorities, students might con-

sider either double-majoring in economics and a complementary discipline or combining the economics major with a minor; the variety of possible combinations reflects the intellectual and aspirational diversity of the Simmons student body. In addition, the department collaborates with other departments in offering courses in East Asian studies, environmental science, international relations, public policy, sustainability, and women's and gender studies. Depending on their areas of special interest and future plans, students might consider the joint major in economics and mathematics, the joint major in financial mathematics, and the minor in public policy studies.

The minor in economics complements the student's major area of study. The minor provides a survey of economic analysis or a focused concentration on particular fields of economic study such as the economics of the environment and sustainability, international economics, monetary economics, social analysis, or public policy.

Major in Economics

Requirements:

The major in economics requires the successful completion of a total of ten courses, consisting of six core courses and four economics elective courses. At least two of the economics electives must be at or above the 200 level. Core courses (all six are required; note the possible substitutions):

ECON 100	Principles of Microeconomics
ECON 101	Principles of Macroeconomics
MATH 118	Introductory Statistics (MATH 227: Biostatistical Design or MATH 229 Regression Models may substitute for MATH 118)
ECON 200	Intermediate Microeconomics
ECON 201	Intermediate Macroeconomics
MATH 120	Calculus I (or a higher-level calculus course)

Elective courses (select four from the following list), including at least two at the 200 level or higher):

ECON 124/ HONS 224	BRICS and the Global Economy
ECON/ WGST 125	Women and Work
ECON 145	Economics of Sustainability and Resource Use
ECON/ WGST 214	Women in the World Economy
ECON 216	Economic Development
ECON 218	International Trade
ECON 220	International Monetary Systems
ECON 222	Comparative Economies of East Asia
ECON 225/ HONS 325	Political Economy of U.S. Capitalism
ECON 231	Money and Banking
ECON 236	Public Economics
ECON 239	Government Regulation of Industry
ECON 241	Business Competition and Antitrust Policy
ECON 247	Environmental Economics
ECON 390	Special Topics in Economics (not counted as an economics elective if used for the independent learning requirement)
ECON 393	Econometrics (not counted as an economics elective if used for the independent learning requirement)

Note: ECON 100 and 101 may be taken in any order; this is true also for ECON 200 and 201. Generally, majors complete ECON 100 and 101 by the end of the sophomore year and the remaining core courses by the end of the junior year. ECON 100 and/or 101 are prerequisites for all upper-level courses

Honors in Economics

Candidacy for honors in economics requires a minimum GPA of 3.67 in economics courses and a thesis proposal, which must be approved by the department normally in the student's junior year. The honors candidate must complete ECON 350 Independent Study and ECON 355 Thesis. Upon completion of the thesis, the department will determine whether the thesis merits designation of honors in economics.

Recommendations:

The student should work closely with her faculty advisor, who can provide invaluable assistance in various aspects of the student's success. First, the student may seek guidance in selecting economics courses that focus on a particular field of interest within economics such as the economics of the environment and sustainable resource use, international economics, monetary economics, social analysis, or public policy. Second, the advisor may help the student identify non-economics courses that would enhance the student's intellectual growth according to her interests, strengths, and goals. Third, the student may want assistance in identifying student organizations or other co-curricular activities that would enhance her study and application of economics. Fourth, the advisor may assist the student in planning and preparing for graduate study or careers. Students considering graduate study in economics or related fields should take ECON 393 and courses in calculus and possibly other areas of mathematics; they should also consider various options that combine economics and mathematics, including the joint major in Economics and Mathematics. Economics majors must also complete eight semester hours of independent learning in order to fulfill the all-College requirement. While the independent learning requirement may be completed in other departments, students are encouraged to complete the requirement within economics. The independent learning requirement can be met within the department through any combination of ECON 350 Independent Study, 355 Thesis, 370 Internship, 390 Special Topics, and 393 Econometrics. ECON 350, 355, and 370 do not count toward the 16-semester hour elective requirement for the economics major. If used for independent learning, ECON 390 and 393 also do not count toward the elective requirement.

3+1 Accelerated Degree Program: B.A. in Economics + M.A. in Public Policy

In the 3+1 program in Economics and Public Policy, students complete the Economics major in three years and the interdisciplinary M.A. in Public Policy in the fourth year. Success in the program will require close collaboration with a faculty advisor, who will guide the student in careful course selection and scheduling. See page 215.

Joint Major in Economics and Mathematics

The formal joint major in economics and mathematics is offered with the Department of Mathematics and is administered by the Department of Economics. This specialization has arisen to meet the needs of economics students realizing the increased role of mathematics and statistics in economic analysis. Also, for those students with good mathematical aptitude who do not wish to specialize only in mathematics, the joint major in economics and mathematics provides the opportunity to develop a field of applied mathematics

Requirements:

ECON 100 Principles of Microeconomics
ECON 101 Principles of Macroeconomics
(ECON 100 & 101 are basic to all other work in economics and should be taken no later than the second year by students considering the joint major.)

The following courses are required:

ECON 200 Intermediate Microeconomics
ECON 201 Intermediate Macroeconomics

ECON 393	Econometrics
MATH 118	Introductory Statistics
MATH 211	Linear Algebra
MATH 220	Multivariable Calculus
MATH 338	Probability
MATH 339	Probability and Mathematical Statistics

In addition, the joint major requires either (1) three economics electives or (2) two economics electives plus MATH 320 Introduction to Real Analysis. In either case, two of the economics electives must be at the 200 level or higher. In addition, joint majors must complete the all-College independent learning requirement. While the independent learning requirement may be completed in other departments, students are encouraged to complete it within either economics or mathematics. Note: ECON 393 is a required course for the joint major and therefore cannot count toward the independent learning requirement.

Joint Major in Financial Mathematics

The Department of Economics also offers a joint major in financial mathematics with the Department of Mathematics. This major is intended to serve students who are interested in applying the principles of mathematical and economic analysis in the financial services industry. Students graduating with this major might become stock analysts, bond traders, or decision analysts at consulting firms, work in the pension/annuity industry, or go to graduate school in the growing area of financial mathematics. The requirements for the joint major in financial mathematics are described in the listings for the Department of Mathematics.

Minor in Economics

The minor in economics requires successful completion of a total of five courses, consisting of ECON 100, ECON 101, and any three economics elective courses other than ECON 390 and ECON 393. Note: ECON 200 and 201 cannot be counted toward the minor.

Minor in Public Policy Studies

For more information see page 215.

COURSES

ECON 100 Principles of Microeconomics (M5) (F, S)

4 sem. hrs.
Addresses debates about whether market capitalism provides the best institutional context for organizing the production, distribution, and consumption of goods and services. Considers consumer and business behavior under various competitive conditions. Assesses the appropriate role for government policy in improving performance of market capitalism. Staff.

ECON 101 Principles of Macroeconomics (M5) (F, S)

4 sem. hrs.
Provides perspective on the economy as a whole. Examines how interactions among national levels of consumption, saving, investment, trade, and government policy cause inflation, unemployment, as well as the economy's oscillation between prosperity and recession. Pays close attention to current macroeconomic events, including changes in the Federal Reserve's monetary policy and the fiscal impact of the national budget. Staff.

ECON 124/HONS 224 BRICS and the Global Economy (M5) (S)

4 sem. hrs. Prereq: Sophomore standing.
Introduces students to the emerging economies known as the BRICS (Brazil, Russia, India, China and South Africa), which are expected to overtake the G-7 countries by 2050. Analyzes the alternative development paths of and the future challenges facing these countries. Examines the regional and global consequences of the rise of these emerging powers. Sohrabji.

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[ECON/WGST 125 Women and Work (M5) (S)
4 sem. hrs. Not offered in 2014-15]
An introduction to the history of women's paid work in the United States and the ongoing challenges women face in relation to the gender wage gap, gender discrimination, gendered occupational segregation, and the glass ceiling. Students write a research paper to relate the course material to their own lives or to the lives of other women. Biewener.

ECON 145 Economics of Sustainability and Resource Use (M5) (F)
4 sem. hrs. [Not offered in 2014-15]
Introduces students to the economic theory of natural resource use and applies economics principles to issues of sustainable development, including "weak" versus "strong" sustainability, efficiency versus equity in the analysis of policy options, and international trade's effects on sustainable development. Mukherjee.

ECON 200 Intermediate Microeconomics (S)
4 sem. hrs. Prereq: ECON 100 and 101.
Provides an intermediate study of the neoclassical theory of consumer choice, producer choice, market structures, general equilibrium, and welfare economics. Emphasizes the way micro decision-making leads to the market allocation of resources. Mukherjee.

ECON 201 Intermediate Macroeconomics (S)
4 sem. hrs. Prereq.: ECON 100 and 101.
Provides an intermediate study of major macroeconomic theories, macroeconomic performance, and fiscal and monetary policies. Particular attention is given to the key historical shifts in macroeconomic theories, policies, and conditions. Aoki.

ECON/WGST 214 Women in the World Economy (S1/F2)
4 sem. hrs. Prereq.: ECON 100 and 101 or consent of the instructor.
A reading seminar addressing the theoretical and practical implications of global economic development issues and programs from the standpoint of women and/or gender. Exami-nation of the feminization of work, along with strategies for contending with the many challenges and opportunities globalization presents to women in communities across the world. Biewener.

[ECON 216 Economic Development (S)
4 sem. hrs. Prereq.: ECON 100 and 101. Not offered in 2014-15]
A reading seminar that addresses the promises and pitfalls of economic development by considering the theory and practice of development in different regions. Particular attention is paid to historical and institutional conditions that have shaped regional dynamics in Europe, East Asia, Latin America, South Asia, and Sub-Saharan Africa. Biewener.

ECON 218 International Trade (F)
4 sem. hrs. Prereq.: ECON 100 and 101.
Introduces students to international trade theory and policy with an emphasis on issues of current interest. Examines theories of why nations trade, the political economy of trade protection and strategic trade policy, debates surrounding trade and intellectual property rights, and environmental concerns. Sohrabji.

ECON 220 International Monetary Systems (S)
4 sem. hrs. Prereq.: ECON 100 and 101.
Introduces students to international monetary theory and policy. Examines the history and political economy of international monetary systems, the behavior of international financial markets, balance of payments, exchange rates, international debt problems, and the role of the International Monetary Fund. Emphasizes current events throughout the course. Sohrabji.

[ECON 222 Comparative Economies of East Asia (S)
4 sem. hrs. Prereq.: ECON 100 and 101 or consent of the instructor. Not offered in 2014-15]
Discusses the changing nature of economic systems by comparing the "new capitalisms" in East Asia. Studies the institutions, rules, and regulations in these emerging economies, including banking regulations, foreign investing, and exchange rate regimes, as alternate models of growth and development are formulated. Sohrabji.

[ECON 225/HONS 325 Political Economy of U.S. Capitalism (S)
4 sem. hrs. Prereq.: ECON 100 and 101 or consent of the instructor. Not offered in 2014-15]
Analyzes contemporary U.S. capitalism through the prism of class, with emphasis on Marx's economic theory of class structures, surplus, exploitation, competition, contradiction, and crisis. Critically compares Marxian economic theory to neoclassical and Keynesian theories. Combines lectures and discussions, and develops critical thinking through critical writing. Aoki.

ECON 231 Money and Banking (F)
4 sem. hrs. Prereq.: ECON 100 and 101 or consent of the instructor.
Examines the U.S. monetary and financial systems, monetary theories, and monetary policy. Surveys theories of interest rates, theories of the interaction between the economy's monetary and productive sectors, and monetary policy. Places monetary theories within the context of broad economic debates. Tracks developments in monetary policy and financial markets, and analyzes impacts on financial intermediation and the macroeconomy. Aoki.

[ECON 236 Public Economics (S)
4 sem. hrs. Prereq.: ECON 100. Not offered in 2014-15]
Analyzes government spending and taxes at the national, state, and local levels. Topics include growth in government, income and corporate taxes in the U.S., major public spending programs, financing health care and education, the Social Security system, and the relationship among various local, state, and federal governments. Mukherjee.

[ECON 239 Government Regulation of Industry (S)
4 sem. hrs. Prereq.: ECON 100 and 101 or consent of the instructor. Not offered in 2014-15]
Examines the government regulation that directly guides, restricts, and overrules private decision making in the U.S. economy. Overview of such regulation along with in-depth analysis of cases such as pharmaceutical drug regulation, environmental protection, and electric utility regulation. Emphasizes recent trends and ongoing debates about appropriate regulation. Mukherjee.

[ECON 241 Business Competition and Antitrust Policy (S)
4 sem. hrs. Prereq.: ECON 100 and 101 or consent of the instructor. Not offerered in 2015-16]
Analyzes the extent and nature of business competition among business firms in the United States. Particularly focuses on those cases where structure and conduct are purported to deviate significantly from conditions of perfect competition. Examines antitrust policy as a means of improving the performance of American industry. Mukherjee.

[ECON 247 Environmental Economics (S)
4 sem. hrs. Prereq.: ECON 100 and 101 or consent of the instructor. Not offered in 2015-2016.]
Examines the roles of the government and the market in tackling local and global environmental problems. Analyzes a range of environmental policies, involving both direct control approaches and incentive mechanisms, and commonly used methods to measure environmental costs and benefits. Topics include water and air pollution, global warming and climate change, acid rain, disposal of solid and hazardous wastes, and endangered species protection. Mukherjee.

ECON 349 Directed Study (F,S)
4 sem. hrs. Prereq.: Consent of the department.
Directed study addresses coursework required for the major or degree not being offered formally that semester. Students work under the close supervision of a faculty member. Consent is required for a directed study, which does not count toward the independent learning requirement. Staff.

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ECON 350 Independent Study (F, S)
4 or 8 sem. hrs. Prereq.: Consent of the department. Staff.

ECON 355 Thesis (S)
4 sem. hrs. Prereq.: ECON 350 and consent of the department.
Written as the culmination of a two-semester project, following writing of an acceptable thesis proposal during the spring of junior year and writing of a literature review in ECON 350 in fall of senior year. Includes oral defense with members of the department. Required for consideration for honors in economics. Staff.

ECON 370 Internship (F, S)
4–16 sem. hrs. Prereq.: Senior standing and consent of the instructor.
Provides students with the opportunity to apply and develop their knowledge and skills as economic analysts in a professional setting while exploring career interests. Each intern completes an in-depth research paper focusing on a project related to the internship site and provides an oral review of her research findings at the end of the semester. Biewener.

[ECON 390 Special Topics in Economics
4 sem. hrs. Prereq.: ECON 200 and 201 or consent of the instructor. Not offered in 2014-2016.]
Intensively studies a particular area of economics using advanced analytical techniques. Intended for juniors and seniors majoring in economics. Offered in a seminar format with a topic that varies from year to year. Staff.

ECON 393 Econometrics (F)
4 sem. hrs. Prereq.: MATH 118 and either ECON 200 or 201 or consent of the instructor.
Introduces the quantitative measurement and analysis of actual economic phenomena using regression analysis. Uses regression techniques to describe economic relationships, to test hypotheses about economic relationships, and to forecast future economic activity. Students complete a research project where they create and test economic models using a statistical package. Sohrabji.

Department of Education

Mission Statement

Simmons educates people who share a passion for learning, a commitment to community, and a determination to make a difference. We prepare educators and leaders through clinical experiences and research-based practices in order to enable them to meet the challenges of a more diverse, technological, and global society. We promote equity, excellence, and social justice in a culture of collaboration.

FACULTY

Janie Ward, *Chair and Professor*
Paul Abraham, *Professor, Director of the MATESL Program*
Kathleen Dunn, *Professor Emerita*
Theresa Perry, *Professor*
Judah Axe, *Assistant Professor*
Daren Graves, *Assistant Professor*
Helen Guttentag, *Professor of Practice, Director of Clinical Programs and Undergraduate General Education*
Joy Bettencourt, *Associate Professor of Practice*
Janet Chumley, *Associate Professor of Practice*
Maryellen Cunnion, *Associate Professor of Practice*
Ellen Davidson, *Associate Professor of Practice, Interim Director of MAT Program*
Jennifer Edge-Savage, *Associate Professor of Practice, Coordinator of the Program in Assistive Special Education Technology*
Jane Hardin, *Associate Professor of Practice, Coordinator of South Coast Educational Collaborative Program*
Madalaine Pugliese, *Associate Professor of Practice and Coordinator of the Program in Assistive Special Education Technology*

Additional Teaching Faculty
Allan Blume
Agnieszka Bourret
Charles Cormier
Judith Freedberg
Stephanie Hamel
Jeffrey Lucove
Bruce Mallory
Sally Nelson
Karen Price
Marnie Reed
Margaret Rodero
Thomas Rooney
Julie Rigo
Jill Sifantus
John Ullian
Barbara Weiffenbach

Staff

Suzanne Kowalewski, *Licensing Specialist*
Nancy Ortega, *Off-Site Program Manager*
Patrick Cunniffe, *Program Coodinator*
Cynthia Smith, *Administrative Assistant*

Simmons also offers graduate programs in education. For more information, see the Graduate Course Catalog.

Teacher Preparation Programs

Note: The Massachusetts state regulations for licensing may continue to change. Thus, requirements for completing education programs in preparation for licensure may also be modified as the department responds to changes in licensing regulations.

The teacher preparation program complies with Massachusetts licensing requirements and with those of the Interstate Certification Compact, with licensing reciprocity in 42 states. Massachusetts requires that all candidates for licensing in all programs in education pass the Massachusetts Tests for Educator Licensure (MTEL). In order for a candidate to receive a license, that person must 1) successfully complete all course and initial licensing requirements of the Simmons program, 2) be recommended for licensure by public school and college faculty at the conclusion of the practicum, and 3) pass all appropriate sections of the MTEL. Candidates seeking out-of-state licensure may additionally be asked to take

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a similar examination required by that state. Department administrators are available to discuss specific licensing information.

An initial license will be awarded upon recommendation to the Commonwealth of Massachusetts after completion of a baccalaureate with a major in one of the liberal arts and sciences as well as in education, or completion of a master's degree through the five year Dunn Scholars Program. The programs below comply with the requirements of the initial license.

The Department of Education offers the following teacher preparation programs at the undergraduate level:

- Elementary*, middle and high school English, History, Mathematics, Biology, Spanish and French.
- English as a second language (PreK-6 and 5-12) – page 125*
- Moderate disabilities (5-12) page 127*
- Severe disabilities (all levels) page 127*

* Students wishing to become licensed in these fields must enroll in the five-year Dunn Scholars Program.

Independent Learning

Education majors fulfill the all-College independent learning requirement through practica. Dunn Scholars fulfill this requirement through EDUC 350 or EDUC 388, or Independent Learning in their liberal arts majors.

Kathleen Dunn Scholars

An integrated bachelor's and master's program is available in all license programs, enabling students to complete a reduced-credit master's program during their fifth year, and do a year long internship in a public school classroom. Students applying for this program are known as Kathleen Dunn Scholars. Dunn Scholars take two to five education courses at the undergraduate level (five for a minor) and complete a full major in a liberal arts area. They must complete eight credits of independent learning either in education or their liberal arts major prior to completion of the bachelor's degree, and apply for admission to the appropriate graduate program at the end of their junior year.

All Dunn Scholars must have a minimum grade point average of 3.0 for admission into the MAT program. Contact the director of undergraduate programs in general education for more information.

A joint social studies–education major is available for students majoring in elementary and special education. See page 124 or contact the director of the general education undergraduate program for further information.

All courses in Stages I, II, and III must be taken for a grade and may not be taken pass/fail.

Students in the four-year program and the Dunn Scholars program must have passing scores on the MTEL Communication, Literacy, and other license required tests before being admitted to the practicum. Students must pass the Communication and Literacy tests no later than the end of the junior year, and must take their subject matter tests as soon as they have completed all of the courses in the content of their fields. It is strongly advised that elementary students take the Math portion of the elementary subject matter test as soon as they have completed MATH 115 and MATH 116.

Bachelor's Programs in Elementary, Middle, and High School Content and ESL

Majors are required to complete the following sequence of courses:

Stage I Fundamentals of Education in the Inclusive Classroom (Common Core)
Stage II Subject Matter Field(s)
Stage III Licensure Preparation

Stage I. Fundamentals of Education in the Inclusive Classroom (Common Core) (8 semester hours)

The following courses are required for all general education and ESL majors:

*EDUC 156	Schools in an Era of Change (freshman or sophomore year)

*GEDUC 460 Teaching Strategies for the Inclusive Classroom (junior year)

*Includes fieldwork

Students will be evaluated for writing competence at the conclusion of EDUC 156 and must be recommended by the faculty to advance to GEDUC 460. Students will again be evaluated after completion of GEDUC 460. Those students who have not demonstrated strong academic and literacy skills will be offered other options and will work closely with their advisors to find a match for their child-related interests in a non-licensed field.

Stage II. Subject Matter Field(s)

All students seeking licensure must complete a major in the liberal arts or sciences as well as in education. Courses are chosen from the arts and sciences appropriate to the student's specialization. Requirements for each level are described below. Students should thus plan their liberal arts majors, college requirements, and courses to fulfill particular subject requirements with their education advisors.

Stage III. Licensure Preparation

Students choose curriculum and methods courses, fieldwork, and student teaching appropriate to their levels and fields of specialization as designated below.

Elementary Teacher (Grades 1–6)

The Elementary Porgam is only offered as a five-year program. In addition to the common core, students must also complete the following courses in Stage II and Stage III.

Stage II. Subject Matter Field (52 semester hours)

English:

One course in World literature or American literature and

CHL 313 Survey of Literature for Children and Young Adults

Mathematics:

MATH 115 Number Systems and Algebra for Elementary School Teachers

MATH 116 Geometry and Data Analysis for Elementary School Teachers

History and Social Studies:

HIST 100 World Civilizations I: Pre-Modern Societies

HIST 101 World Civilizations II: Colonialism and Post-Colonialism

HIST 140 History of American Civilization I

POLS 101 Introduction to American Politics

Science and Technology Engineering:

*BIOL/ PHYS 103 Great Discoveries in Science

or *BIOL 113 General Biology

PHYS 105 Science and Technology in the Everyday World: The Way Things Work

PSYC 101 Introduction to Psychological Science

Art/Music:

One course chosen with advisor

Stage III. Licensure Preparation (28 semester hours)

Some or all of these courses may be taken at the graduate level during the fifth year.

Required courses:

*GEDUC 461 Social Studies, Science and the Arts in the Elementary Classroom

*GEDUC 464 Reading and Language Arts for the Elementary Classroom

*GEDUC 467 Math for the Elementary Classroom

*TESL 417 Sheltered English Instruction

*SPND 446 Learners with Special Needs

*Includes fieldwork.

Elementary Minor (20 semester hours)

Dunn Scholars (see page 122) might choose to do a minor and complete their licensure preparation at the graduate level during their fifth year. Students complete EDUC 156 and GEDUC 460 and select three of the following courses:

*SPND 446	Learners with Special Needs (or other appropriate special education course)
*GEDUC 461	Social Studies, Science, and the Arts in the Elementary Classroom
*GEDUC 464	Reading and Language Arts for the Elementary Classroom
*GEDUC 467	Math for the Elementary Classroom

*Includes fieldwork.

Joint Social Studies–Education Major (36 semester hours)

This joint major is designed for students with elementary and special education majors. Courses selected offer the best preparation for the social studies curriculum now mandated by the Massachusetts Curriculum Frameworks and taught in public school classrooms, and are designed to prepare candidates for the MTEL now required of all elementary and special education teacher candidates. Students should work closely with their advisors in the education department to plan a course of study. In addition to the courses prescribed in the joint major, students should take courses to complete the subject matter core required for licensing (Stage II and Stage III) as well as courses that fulfill the College requirements.

American History (8 semester hours):
HIST 140 History of American Civilization I: 1607-1877
or HIST 241 Revolutions in the West
and one U.S. history course above the 100-level that includes material from the 20th century

World Civilization (8 semester hours):
HIST 100 World Civilizations I
or HIST 222 Greek and Roman History
and one non-U.S. history course above the 100-level that focuses on a period of history since the Renaissance.

Economics (8 semester hours):
ECON 100 Principles of Microeconomics
ECON 101 Principles of Macroeconomics

Political Science (4 semester hours):
POLS 101 Introduction to American Politics

Depth (8 credits):
Two courses above the 100 level, chosen from history or political science and international relations.

Note: Many of the courses in this major include courses in the subject matter core and the modes of inquiry.

Middle School Teacher (Grades 5–8) in Subject Matter Fields
or
High School Teacher (Grades 8–12) in Subject Matter Fields
or
Teacher of Spanish or French (Grades 5–12)

Four-year students preparing to teach at the middle school or high school level must double-major in education and in a subject matter area taught in public schools. In addition to the common core, students are required to take the following courses in Stage II and Stage III.

Stage II. Subject Matter Field(s)

Special subject teachers at the high school and middle school levels must complete the requirements for a major in their subject matter fields. In some areas, additional specific courses are required by state regulations. Students must consult with an advisor in the Department of Education while planning their academic major.

Teacher of biology: A major in biology is required.

Teacher of English: A major in English is required.

Teacher of English as a Second Language: A major in English, or another modern language or other liberal arts majors, are possible. Note, however, that competence in a modern language at or above the intermediate level is required for all. Required ESL subject matter includes the following courses:

*ML 310	Introduction to Linguistics and English Grammar
*TESL 445	Fundamentals of Reading and Writing in a Second Language
TESL 451	Bilingualism and Language Variation in Multicultural Settings
*TESL 479	Teaching English as a Second Language Methodology and Curriculum Development
*ML 408	Second Language Acquisition

*Includes fieldwork

See page 125 for more details about English as a Second Language.

Teacher of history: A major in history is required.

Teacher of modern world language: A major in a modern language other than English is required. Twenty semester hours must be above the intermediate level, and advanced composition and conversation, linguistics, and theories of first and second language acquisition must be included. Students must demonstrate fluency as determined by the Department of Modern Languages and Literatures before student teaching. In addition, Massachusetts licensure requires a demonstration of proficiency at or above the advanced level according to ACTFL/ILR guidelines.

Teacher of mathematics: A major in mathematics is required.

Stage III. Licensure Preparation (32 semester hours)

Required courses:

PSYC 236	Psychology of Adolescence (Prereq.: PSYC 101)
EDUC 310	Seminar in Teaching and Learning at the Middle and High School Level (taken concurrently with EDUC 383, EDUC 384, or EDUC 385)
EDUC 383	Practicum: Middle School (Grades 5–8) (12 semester hours)
or EDUC 384	Practicum: High School (Grades 8–12) (12 semester hours)
or EDUC 385	Practicum: French, Spanish, ESL (Grades 5–12) (12 semester hours)
GEDUC 420	Reading and Writing Across the Curriculum in the Secondary School
*GEDUC 455	Issues in Teaching and Learning for Middle and High School Teachers
*GEDUC 47–	A course in the curriculum of specific subject areas in middle and high school
*TESL 417	Sheltered English Instruction
*SPND 446	Learners with Special Needs

*Includes fieldwork

Middle/High Schools Minor (20 semester hours)

Dunn Scholars (see page 122) might minor in education and complete their licensure preparation at the graduate level during their fifth year.

*EDUC 156	Schools in an Era of Change
*SPND 446	Learners with Special Needs or another appropriate course in special education
*GEDUC 455	Issues in Teaching and Learning for Middle and High School Teachers
*GEDUC 460	Teaching Strategies for the Inclusive Classroom

GEDUC 47- A course in the curriculum of specific subject areas in middle and high school

*Includes fieldwork

English as a Second Language (5–12)

The program in English as a second language prepares teachers to work with non-native English speakers in public schools in self-contained and pull-out classrooms at middle and high school levels. This is a five-year program after which students earn a master's degree (The Dunn Scholar Program). This program should be taken concurrently with a major in one of the liberal arts or sciences. A strong background in a second language and culture is necessary, and a semester abroad is strongly encouraged. (Students interested in ESL should contact the MATESL program for specific advising.)

First Year

Modern language (101, 102, or appropriate level)

PSYC 101 Introduction to Psychological Science

EDUC 156 Schools in an Era of Change

Sophomore Year

Modern language (201, 202, or appropriate level)

PSYC 236 Psychology of Adolescence

Junior Year

Modern language (240, 245, or appropriate level)

*GEDUC 460 Teaching Strategies for the Inclusive Classroom

Senior Year

TESL 451 Bilingualism and Language Variation in Multicultural Settings

TESL 445 Reading and Writing in a Second Language

*TESL 479 Teaching English as a Second Language Methodology and Curriculum Development

*ML 310 Introduction to Linguistics and English Grammar

*ML 408 Second Language Acquisition (summer after graduation)

*Includes fieldwork

SPECIAL EDUCATION

In the field of special education, Simmons College offers training for Massachusetts licensure for teachers of students with moderate disabilities (Levels: PreK–8 or 5–12) and teacher of students with severe disabilities (Levels: All). Students interested in these programs are required to enroll in the five-year Dunn Scholar Program. Students who select one of these programs must also have a major in the liberal arts or sciences. In addition, as mandated by the Massachusetts Department of Elementary and Secondary Education, all students must document at least 36 semester hours in upper- and lower-level arts and sciences coursework covering composition, American literature, world literature, including British literature, U.S. history from colonial times to present, world history, including European history from ancient times to the present, geography, economics, U.S. government, including founding documents, child development; science laboratory work, and appropriate mathematics and science coursework (Courses under Elementary Teacher (Grades 1-6) are highly recommended for all Special Education students since these courses form the basis of the preparation for the General Curriculum Tests required by all seeking license in Special Education). Students may opt to minor in special education, but a master's is required to obtain licensure.

The five-year Dunn Scholar Program is essentially the only route to licensure in the programs in Special Education.

Courses are as follows:

First Year

PSYC 101 Introduction to Psychological Science

EDUC 156 Schools in an Era of Change

Second Year

PSYC 235	Developmental Psychology
or PSYC 236	Psychology of Adolescence
Liberal arts requirements	

Third Year

SPND 446	Learners with Special Needs
RDG 410	Multisensory Structured Language Strategies for Reading
GEDUC 467	Math for the Elementary Classroom
*GEDUC 460	Teaching Strategies for the Inclusive Classroom

***Recommended**

Fourth Year

SPND 422	Differentiating Instruction Using Technology Across the Curriculum
SPND 444	Special Education Laws and Regulations for Teachers and Administrators (2 credits)
SPND 445	The Individualized Education Program: Strategies for Development, Interpretation and Implementation (2 credits)
SPND 350	Independent Study

Fifth Year

The courses as listed under the appropriate designation.

Moderate Disabilities (Levels: PreK–8 or 5–12)

This concentration prepares students in inclusive education to work with learners with moderate disabilities in grades PreK–8 or 5–12 emphasizing collaborative consultation, general education classroom accommodations, curriculum strategies, and family involvement. The program provides the opportunity and skills to develop effective strategies to work with learners with moderate disabilities in a variety of public or 603 CMR 28.00 approved school settings.

The following courses are included in the post-baccalaureate curriculum:

SPND 441	Classroom Management for Learners with Special Needs in Inclusive Settings
RDG 406	The Structure of Language for Teachers
SPND 415	Applied Research I
SPND 436	Formal and Informal Assessment
SPND 435	Practicum in Special Education (Moderate Disabilities; PreK-8)
or SPND 440	Practicum in Special Education (Moderate Disabilities; 5-12)
SPND 438	Practicum in Special Education (Moderate Disabilities; PreK-8)
or SPND 439	Practicum in Special Education (Moderate Disabilities; 5-12)
SPND 487	Seminar and Fieldwork in Education (2 credits)
SPND 488	Seminar and Fieldwork in Education (2 credits)
TESL 417	Sheltered English Instruction

Severe Disabilities (Levels: All)

The severe disabilities (Levels: All) concentration prepares students to work with learners with severe disabilities in inclusive general education classrooms, in self-contained special education classes in general public schools, or in 603 CMR 28.00 approved residential or day schools. The goal is to support meaningful access to curriculum of learners with severe disabilities in inclusive classrooms, the community, and the workplace. Working in preschool, elementary, middle, and high school settings, each student is prepared to teach learners age-appropriate skills using the Massachusetts Curriculum as well as communication techniques, self-help strategies, social behavior skills, and specific vocational training.

The following courses are included in the post-baccalaureate curriculum:

SPND 415	Applied Research I
SPND 442	Analysis of Behavior: Principles and Classroom Applications
SPND 447	Assessment and Curriculum Development for Learners with Severe Disabilities

SPND 448	Analysis of Community Resources, Adult Service Agencies, and the Transition Process (2 credits)
Elective	
SPND 467	Practicum: Severe Disabilities (Levels: All)
SPND 468	Practicum: Severe Disabilities (Levels: All)
SPND 487	Seminar and Fieldwork in Education (2 credits)
SPND 488	Seminar and Fieldwork in Education (2 credits)
TESL 417	Sheltered English Instruction

Special Education Practicum (completed during the master's year)

The practicum provides students with an in-depth learning experience under the guidance of skilled cooperating practitioners and College supervisors. In addition, it allows practicum students the opportunity to collaborate with special education and general education instructors, enabling them to meet the standards under the state regulations for an initial license. This experience involves practicum students in all areas of the Massachusetts Curriculum. Students in Programs in Special Education must pass all applicable sections of the MTEL as designated by the Massachusetts Department of Education, including the Communication and Literacy Skills test, subject matter test, General Curriculum tests (multi-subject and math subtest), and Foundations of Reading test (Moderate Disabilities Only), in order to register for the practicum. Students must submit formal documentation of test scores to the Programs in Special Education prior to registration.

Independent Learning

Special education minors can fulfill the all-College independent learning requirement by completing SPND 350 Seminar and fieldwork in Education.

Minor in Special Education

A student may pursue a minor in special education by completing the following courses: EDUC 156, SPND 446, RDG 410, SPND 422, SPND 444, and SPND 445.

COURSES

EDUC 108 Introduction to Early Childhood Education (F-1,2)
4 sem. hrs.
Provides a comprehensive view of early childhood education with particular focus on the critical examination of models of effective early childhood programs and practices. Emphasizes the social contexts of the education of young children, with attention to the role of culture, families, peers, play, and social behaviors. Examines specific programs and models of early childhood education. Requires site visits. Schnapp.

EDUC 156 Schools in an Era of Change (F-1,2; S-1,2)
4 sem. hrs.
Engages students in a range of issues and ideas that are part of the American educational scene, including schools as social organizations, special education, the role of technology in teaching, standardized testing, the philosophy and history of education, and the search for instructional excellence and equity in education. Requires fieldwork and computer use. Oakes, Cunnion, Bettencourt.

EDUC 310 Seminar in Teaching and Learning at the Middle and High School Level (S-1,2)
4 sem. hrs. Prereq.: Stage I and II.
Applies theoretical knowledge of pedagogy and developmental learning to develop lesson plans, integrate curriculum units, and consider models of effective classroom management. Focuses on appropriate assessment procedures and adapting curriculum to provide for individual differences. Also addresses effective parent communication, legal and ethical issues, and professional portfolio development. Taken in conjunction with the spring practicum. Staff.

GEDUC 420 Teaching for Content Area Literacy (F-1,2; S-1,2; U-1,2)
4 sem. hrs. Prereq.: Stage I.
Focuses on providing secondary teachers with research-based, pragmatic strategies to help their students develop content area literacy. Utilizing a lesson and unit planning framework, students will learn and apply reading, writing, speaking, listening and presenting tools and techniques to their respective content areas. Additionally, students will learn and apply instructional strategies for the "new literacies" associated with the Internet. In turn, these tools, techniques, and instructional strategies will help their students to better access, understand, and communicate content, as well as become independent learners. Lucove.

EDUC 349 Directed Study (F-1,2; S-1,2)
4 sem. hrs.
Directed study addresses coursework required for the major or degree not being offered formally that semester. Students work under the close supervision of a faculty member. Consent is required for a directed study, which does not count toward the independent learning requirement. Staff.

EDUC 350 Independent Study (F-1,2; S-1,2)
4 sem. hrs. Staff.

EDUC 388 Fieldwork in Education (F-1,2; S-1,2)
4 sem. hrs. Staff.

GEDUC 455 Issues in Teaching and Learning for Middle and High School Teachers (F-1,2; S-1,2)
4 sem. hrs. Prereq.: Stage I.
Considers professional issues for middle and high school teachers and students, including current school reform efforts, the multicultural debate, and other issues of race, gender, and sexual orientation. Examines the effect of school culture and the influence of television. Requires fieldwork if not taken concurrently with subject area methods course. Davidson, Oakes.

GEDUC 460 Teaching Strategies for the Inclusive Classroom (F-1,2; S-1,2; U-1,2)
4 sem. hrs. Prereq.: EDUC 156 and consent of the department. Not open to first-year students.
Examines a variety of teaching strategies applicable to students in heterogeneous classrooms: techniques to individualize instruction and promote mastery learning, development of cooperative learning strategies, and consideration of specific classroom and behavior management procedures. Requires fieldwork. Bettencourt.

GEDUC 461 Social Studies, Science, and the Arts in the Elementary Classroom (F-1,2; S-1,2; U-1,2)
4 sem. hrs. Prereq.: Stage I.
Considers methods and materials for elementary curriculum in social studies, science, music, and art, emphasizing the unit approach to curriculum organization. Incorporates audiovisual materials. Examines experimental models and techniques of observation. Requires field experience in an inclusive classroom or a museum setting. Cormier.

GEDUC 464 Reading and Language Arts for the Elementary Classroom (F-1,2; S-1,2; U-1,2)
4 sem. hrs. Prereq.: Stage I.
Considers methods of assessment and instruction in creating comprehensive literacy programs with reference to the ELA Frameworks throughout, decoding strategies including phonemic awareness and phonics skills, comprehension strategies, guided reading; literature circles, the writing process, and the integration of children's literature and poetry. Requires two mornings a week of fieldwork if taken concurrently with GEDUC 467. Scotto, Rodero.

GEDUC 467 Math for the Elementary Classroom (F-1,2; S-1,2; U-1,2)
4 sem. hrs. Prereq.: Stage I.
Considers basic topics of elementary mathematics from contemporary viewpoints to reinforce mathematics learning. Examines varying pupil responses and techniques of instruction and construction of curriculum units. Requires field experience in an inclusive classroom. Includes two mornings a week of fieldwork if taken concurrently with GEDUC 464. Davidson, Hamel.

GEDUC 471 English Curriculum at the Middle or High School Level (F-1,2)
4 sem. hrs. Prereq.: Stage I.
Considers issues in the teaching of high school and middle school English, including selection and justification of content, models of curriculum design, lesson and unit planning, history and structure of English language, and language acquisition theories. Includes observation and aiding experiences in inclusive English classrooms. Rooney.

F = Fall
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U = Summer
TC = Travel Course
1 = AY 2014–2015
2 = AY 2015–2016
M = Mode
* = Schedule t.b.a.

GEDUC 472 Modern Foreign Language Curriculum at the High School or Middle School Level (F-1,2)
4 sem. hrs. Prereq.: Stage I and one course in advanced composition or stylistics.
Considers major pedagogical issues in modern language instruction with specific attention to theories of language acquisition, the development of listening, speaking, reading, and writing skills, selection and justification of content, models of curricular design, and construction of lesson plans and units. Includes observation and aiding experiences in inclusive language classrooms. Nelson.

GEDUC 474 History and Political Science Curriculum at the High School or Middle School Level (F-1,2)
4 sem. hrs. Prereq.: Stage I.
Considers major pedagogical issues in teaching history and the social sciences, emphasizing selection and justification of content, models of curriculum design, modes of inquiry, and construction of lesson plans and units. Includes observation and aiding experiences in inclusive social studies classrooms. Bettencourt.

GEDUC 476 Science Curriculum at the High School or Middle School Level (F-1,2)
4 sem. hrs. Prereq.: Stage I.
Introduces middle and high school science teaching: specific problems, instructional materials, and teaching techniques. Emphasizes observing and aiding inclusive science classes. Sifantus, Weiffenbach.

GEDUC 478 Mathematics Curriculum at the High School or Middle School Level (F-1,2)
4 sem. hrs. Prereq.: Stage I.
Explores contemporary issues and problems in middle and high school level mathematics teaching, including curriculum projects and materials and their origins, rationales, and uses. Emphasizes the teacher's role as a generator of knowledge and curriculum and the formulator of instruction. Includes appropriate field experience. Mallory.

TESL 417 Sheltered English Instruction (F, S, U)
4 sem. hrs. Either GEDUC 460 or SPND 446
Successful completion of this course can qualify you for Massachusetts Sheltered English Instruction (SEI) Endorsement. For pre-service teachers in core subject areas, the course will build your skills, confidence, and familiarity with research-proven practices for working with English Language Learner (ELL) students. You will cover the social, cultural, familial, and academic factors that affect learning. You will learn strategies for sheltering content for ELLs and, using WIDA language standards, you will explore the link between oral language and student learning of academic language and literacy skills. This course was created for candidates working toward their first initial teaching license in a core subject area and is not intended for incumbent, already-licensed teachers. Abraham, Chumley.

TESL 445 Fundamentals of Reading and Writing in a Second Language (F-1,2)
4 sem. hrs.
Provides an introduction to reading and writing in a second language. Examines theories of reading both first and second language, relevant differences in first and second reading processes and instruction, particularly with beginning readers, and formal and informal reading assessment. Involves tutoring. Writing theory and practice will be examined and instructional approaches to writing, the writing process, and writing assessment will also be considered. Requires fieldwork. Abraham, Staff.

TESL 451 Bilingualism and Language Variation in Multicultural Settings (F-1,2)
4 sem. hrs.
Examines language policy, minority language rights, and linguistic and political issues affecting bilingual education in a multicultural context. Investigates the effects of gender, race, and culture on language use within developmental stages and learning styles of students across grade levels. Emphasizes assessment procedures and the involvement of parents in education. Chumley.

TESL 479 Teaching English as a Second Language Methodology and Curriculum Development (S-1,2)
4 sem. hrs.
Introduces students to teaching English as a second language. Offers an overview of the history of second language teaching, methodologies, approaches, and techniques and their underlying theories and assumptions. Examines specific classroom techniques – reading and writing processes and instruction and assessment and testing – and their application to curriculum development. Requires fieldwork. Bourret.

ML 310 Introduction to Linguistics and English Grammar (S-1,2)
4 sem. hrs.
Examines phonological, morphological, lexical, syntactic, and historical issues for TESL or anyone interested in English language. Involves tutoring a non-native speaker for a view of English grammar from the learner's perspective and synthesizing teaching points and strategies. Requires fieldwork. Chumley.

ML 408 Second Language Acquisition (U-1,2)
4 sem. hrs.
Presents research underlying major theories of second language acquisition, considering such factors as age, role of first language, language environment, learning style, and motivation. Also includes acquisition order, error analysis, interlanguage, and discourse analysis, as well as implications for classroom practice. Involves tutoring a non-native English speaker to reflect on the process of language acquisition. Requires fieldwork. Price, Reed.

RDG 406 The Structure of Language for Teachers (F-1,2)
4 sem. hrs.
Provides an overview of the structure of the language and methods to teach reading and spelling through multisensory and associative teaching techniques. Progresses in a sequential, systematic, hierarchical order to cover phonemes, graphemes, and patterns of English. Includes morphological (rules for the addition of prefixes and suffixes) and syntactical structure. Chumley.

RDG 410 Multisensory Structured Language Strategies for Reading (S-1,2)
4 sem. hrs.
Focuses on identifying and developing appropriate multisensory structured language strategies in phonological/phonics awareness, reading comprehension, and textbook and study skills for learners with language and reading challenges. Emphasizes use of these techniques and strategies within inclusive and general education settings. Collins, Machamer, Rigo.

SPND 422 Differentiating Instruction Using Technology Across the Curriculum (U-1,2)
4 sem. hrs.
Explores strategies to incorporate assistive special education technology into classrooms and learners' individualized educational programs. Provides real-world experiences, resources, and skill development in the latest software, adaptive equipment, and best practices. Explores readily implemented practical solutions for inclusive classrooms. Pugliese, Edge-Savage.

SPND 436 Formal and Informal Assessment (F-1,2)
4 sem. hrs.
Involves observation, analysis, and interpretation of children's learning needs, utilizing formal and informal assessment devices in order to write, implement, and evaluate individualized educational programs. Reviews test instruments and current issues in assessment. Requires weekly fieldwork in an integrated setting. Stefanini, Waterman, Waters.

SPND 441 Classroom Management for Learners with Special Needs in Inclusive Settings (F-1,2)
4 sem. hrs.
Focuses on the basic principles and approaches for the effective management of behavior for learners with special needs. Emphasizes preventive discipline, classroom environments, and techniques effective with learners with diverse needs and abilities, and strategies for behavior management in multicultural settings. Axe, Hardin.

SPND 442 Analysis of Behavior: Principles and Classroom Applications (F-1,2)
4 sem. hrs.
Introduces behavior modification and operant techniques, including clarification of more commonly used terms, with specific reference to application in the classroom. Provides overview of procedures and practices successful in schools, communities, and work settings. Requires fieldwork. Axe.

SPND 444 Special Education Laws and Regulations for Teachers and Administrators (S-1,2; U-1,2)
2 sem. hrs.
Offers an examination of the historical, philosophical, legal, and ethical perspectives of educational services for learners with special needs. Reviews the statutory and regulatory foundations pertaining to children and youth with disabilities. Key judicial interpretations of those policies will also be reviewed. Students are not required to have a background in law. Blume, Ullian.

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* = Schedule t.b.a.

SPND 445 The Individualized Education Program: Strategies for Development, Interpretation and Implementation (S-1,2; U-1,2)
2 sem. hrs. Prereq. SPND 444.
Offers an examination of the legal requirements, as well as the process for the development, implementation and interpretation of the Individualized Education Program (IEP). The IEP forms the basis for the provision of specially designed instruction to students with special needs who are eligible for special education under the provisions of the Individuals with Disabilities Education Act (IDEA). Analysis of IEP meeting procedures and protocols are also integral to this course. Blume, Ullian.

SPND 446 Learners with Special Needs (F-1,2; U-1,2)
4 sem. hrs.
Explores major areas of special needs and examines issues unique to the delivery of service to learners with special needs, including assessment strategies, equipment adaptation, materials, and parent/professional relations. Focuses on language development and communication problems. Requires fieldwork. Evans, Hardin.

SPND 447 Assessment and Curriculum Modification and Development for Learners with Severe Disabilities (F-1,2)
4 sem. hrs.
Examines curriculum development, assessment techniques, and teaching/learning procedures to plan instructional programs in major life skills areas. Emphasizes analyzing functional tasks and developing individualized educational programs for implementation in general education classrooms and settings. Requires fieldwork. Lenane.

SPND 448 Analysis of Community Resources, Adult Service Agencies, and the Transition Process (U-1,2)
4 sem. hrs.
Examines employment opportunities and support services available to citizens with severe disabilities. Involves job inventories in local industry and analysis of the prerequisite skills in such areas as functional academics, language, hygiene, motor skills, interpersonal skills, transportation, and money management. Includes placement and supervision of learners in worksites. Requires fieldwork. Blume, Williams.

SPND 469 Topics in Clinical Practice (F-1,2; S-1,2)
4–8 sem. hrs.
Involves working with learners with moderate disabilities or severe disabilities under the mentorship of a faculty advisor. Explores classroom techniques and procedures using concept papers or a critical review of the literature on a specific topic. Staff.

PRACTICA

All student teaching will take place within a 50-mile radius of the College. Students are responsible for arranging and paying for transportation to and from schools and for making housing arrangements with the College during spring recess. In those courses required to meet state standards, the department expects a level of academic distinction, including a cumulative grade point average of 3.00 in order to be recommended for a practicum. All students must document 75 hours of pre-practicum fieldwork prior to advancing to the practicum. Students must also pass the required Massachusetts Tests for Educator Licensure (MTEL) prior to admission to the practicum. Practica descriptions can be found at the end of course listings for each teacher preparation program.

In accordance with Section 207 of Title II of the Federal Higher Education Act, all programs of teacher education need to report the pass rates of their students on statewide testing for teacher certification.

For further information for past cohorts, please see the Simmons College website.

EDUC 383 Practicum: Middle School (Grades 5–8) (S-1,2)
12 sem. hrs. Prereq.: Consent of the department.
Assigns supervised teaching responsibilities in an appropriate inclusive middle school classroom in the metropolitan Boston area. Includes planning and implementing daily class lessons, developing curriculum materials, and demonstrating service to students who fall short of classroom instructional objectives. Requires papers and weekly seminars. Staff.

EDUC 384 Practicum: High School (Grades 8–12) (S-1,2)
12 sem. hrs. Prereq.: Consent of the department. Assigns supervised teaching responsibilities in an appropriate inclusive high school classroom in the metropolitan Boston area. Includes planning and implementing daily class lessons, developing curriculum materials, and demonstrating service to students who fall short of classroom instructional objectives. Requires papers and weekly seminars. Staff.

EDUC 385 Practicum: French, Spanish, or ESL (Grades 5–12) (S-1,2)
12 sem. hrs. Prereq.: Consent of the department. Assigns supervised teaching responsibilities in an inclusive French, Spanish, or ESL classroom in the metropolitan Boston area. Includes planning and implementing daily class lessons, developing curriculum materials, and demonstrating service to students who fall short of classroom instructional objectives. Requires papers and weekly seminars. Chumley.

EDUC 388 Fieldwork in Education (F-1,2; S-1,2)
8 sem. hrs. Prereq.: Consent of the department. Limited enrollment.
Two full days a week of clinical experience in a private or public school classroom. Guttentag.

Linguistics Courses for Education Majors

ML 310 Introduction to Linguistics and English Grammar (S-1,2)
4 sem. hrs.
Examines phonological, morphological, lexical, syntactic, and historical issues for TESL or anyone interested in the English language. Involves tutoring a non-native speaker for a view of English grammar from the learner's perspective and synthesizing teaching points and strategies. Chumley.

Please Note:

Because of the complexities of the Education Program in meeting all of the state requirements for licensure, it is critical that students follow the study plans developed with their advisors. Deviation from the established program, without approval by the advisor, may result in students having to take an additional semester in order to complete all licensure and graduation requirements.

THE MASSACHUSETTS CORI

Students seeking prepracticum fieldwork placements prior to their practicums or graduate-level internships may be asked by the school district to have a CORI (Criminal Offender Record Information), a criminal background check, done on them. It is very likely that students will be asked for this prior to their placements in their practicums or internships. All candidates applying for teaching positions in Massachusetts public schools will be required to have a CORI completed.

A CORI will reveal any arrest and/or conviction of a felony or misdemeanor in Massachusetts. A school district has the right to refuse placement or employment of any applicant whose CORI reveals any criminal record.

The application for a teaching license in Massachusetts includes the following question: Have you ever been convicted of a felony? The state has the right to refuse a teaching license to any applicant who has a questionable criminal record.

F = Fall
S = Spring
U = Summer
TC = Travel Course
1 = AY 2014–2015
2 = AY 2015–2016
M = Mode
* = Schedule t.b.a.