

College of Arts and Sciences

Master of Arts in American and New England Studies

Director: Ardis Cameron

Professors: Cameron, Cassidy, Conforti, Edney; *Associate Professors:* Ryden

Program Description

New England, as the publisher of *Yankee* magazine recently quipped, looks more like New England today than it did 30 years ago. Such observations reflect a new self-consciousness about regional identity in general, and about New England in particular. Popular interest in regionalism also underscores new scholarly attention to the role of cultural institutions, practices, and performances in helping to shape both national and regional identities. Mythic New England embodies some of the most familiar American images and the region has historically held a special place in the American imaginary landscape. Steeped in tradition and the kinds of pastoral images celebrated by *Yankee* magazine, New England was also the nation's most urban and Roman Catholic region in the post-Civil War period. It was multicultural from the beginning.

The American and New England Studies program is committed to studying regionalism in the context of contemporary thought and scholarship. It is both a regional and an American studies program. The program's focus is on New England, but the region is examined in the broad context of American social and cultural experience as a whole. Exploring as well as destabilizing "official" New England, the program offers students a wide range of interdisciplinary approaches and methodologies—including folklore, literary studies, visual culture, landscape and cultural geography, art and architectural history, archaeology, cultural criticism, environmental studies, and ethnography—but stresses the historicity of such practices, and of the culture and society they set out to explore.

The program seeks:

- to offer students a challenging interdisciplinary program focusing on the study of New England and the "new" regionalism;
- to emphasize the critical role of the arts, humanities, and social sciences in understanding New England and in interpreting its history and culture to the public;
- to prepare students for a variety of opportunities that require critical thinking, scholarly analysis, research skills, and the ability to communicate effectively;
- to integrate the study of regionalism into American studies;
- to create new opportunities for exchanges among scholars, professionals, and graduate students with common interests in American and New England studies;
- to act as a cultural and educational resource for the region.

Through courses, lectures, conferences, and internships, the program explores New England's distinctiveness and examines the region's contributions to American culture as a whole.

Admission

Admission to the American and New England Studies program is selective. The program seeks applicants who have a bachelor's degree with a record of academic achievement and who are committed to employing interdisciplinary approaches and methodologies. The program welcomes full-time and part-time students; courses are offered in the late afternoon and evening. All applications are reviewed by an admissions committee comprised of the director of American and New England Studies and faculty who teach in the program. Interviews may be required at the discretion of the Admissions Committee.

Application Materials

In addition to the materials described in the Admissions chapter, applicants for this program must submit:

1. Official scores for the Miller Analogies Test (MAT) or Graduate Record Examination (GRE). Only students with an M.A. degree in the humanities or social sciences, or those holding a J.D., are exempt from this requirement.

2. Three letters of recommendation on standard application forms or stationery.

Application Deadline

Applications for the spring semester must be received by October 15. Applications for the fall semester must be received by January 15 to be considered for tuition waivers and by February 15 to be considered for graduate assistantships.

Applications received after these deadlines may be considered on a space-available basis through the end of March. Early acceptance may be considered at the request of the applicant and at the discretion of the Admissions Committee.

Program Policies

In addition to the general policies described in the Academic Policies chapter, specific policies of this program are as follows:

Admissions Credit Students who have not been officially admitted to the program may take courses for admissions credit. Normally, six admissions credits are the maximum allowed. The director of American and New England Studies must approve all requests for admissions credit.

Transfer Credit A student may transfer up to six credits into the American and New England Studies Program. To be considered for transfer credit, previous coursework must be interdisciplinary and must focus on America or New England. In addition, only coursework awarded a grade of B or better will be considered for transfer credit. The Admissions Committee will review all requests for transfer credit. Course materials should accompany these requests.

Time Limit Students must complete all requirements for the degree within six years from the date of first matriculation.

Program Requirements

The curriculum is unique; unlike other regional studies and interdisciplinary programs, the curriculum consists of courses that have been created specifically for the American and New England Studies master's degree and that integrate the arts, humanities, and social sciences. Students may pursue a 30-credit program that includes a thesis or project or they may follow a 36-credit program that does not include a thesis or project. Students who elect the 36-credit program must complete two research papers in elective courses. A third option is also available in Public Culture and History. Students take 27 credits in ANE and 9 credits in nonprofit management and internship. Students in this track also must complete two research papers in elective ANES courses.

30-Credit Program

Required Courses			Credits
ANE 600	Creating New England I		3
ANE 610	Creating New England II		3
ANE 675	Workshop in Research and Writing		3
ANE 690	Project		
	or		
ANE 695	Thesis		<u>6</u>
			15
Elective Courses			
Five courses chosen from ANE offerings			<u>15</u>
			30

36-Credit Program

Required Courses			Credits
ANE 600	Creating New England I		3
ANE 610	Creating New England II		<u>3</u>
			6
Elective Courses			
Ten courses chosen from ANE offerings			<u>30</u>
			36

Public Culture and History (36 credits)

Required Courses			Credits
ANE 600	Creating New England I		3
ANE 610	Creating New England II		3
ANE 670	Museums and Public Culture		<u>3</u>
			9

Elective Courses			
Six courses chosen from ANE offerings			18
One of the following 9-credit tracks:			<u>9</u>
			36
Track A			
ANE 687	Internship		3
2 courses in nonprofit management			6
	or		
Track B			
ANE 687*	Internship		3
ANE 687*	Internship		3
1 course in nonprofit management			3

*Internships must be at different institutions or in different areas of museum work (e.g., curatorial, educational).

Both the 30-credit and the 36-credit program offer students opportunities to focus their coursework in particular areas: history, literature, material culture and the visual arts. In addition, the project and thesis offer students opportunities to demonstrate intellectual independence and creativity by developing programs of study that address individual interests.

ANE 600 Creating New England I

This required core course examines the development of New England regional identity from the 17th to the mid-19th century. Drawing on interdisciplinary approaches and materials, the course focuses on how regional identity has been both historically grounded and culturally invented. Topics include: the invention of New England as a second England; the Yankee character; the New England town; the creation of regional traditions; and the perspectives of Native Americans and African Americans on narratives of New England identity. Cr 3.

ANE 610 Creating New England II

The second part of the required core sequence, this course continues the examination of New England regional identity from the mid-19th century to the present. Topics include: the colonial revival; New England's working class and ethnic heritage; nostalgia; the regional revival of the 1920s and 30s; and regional identity and consumer culture. Cr 3.

ANE 612 Documenting America: Ethnography and Oral History

This course is an introduction to the practice, politics, and history of documentary field studies. It will focus on oral history and ethnography as both a method and as a particular genre of culture writing and representation. In class, students will explore various strategies and practices of ethnography, including travel writing, local color, anthropology, exploration literature, documentary film making, and oral history. Students will grapple with contemporary issues that confront modern practices of "field work," such as cultural authority, displacement, marginalization, modes of cultural interpretation, stranger talk, insiders/outside, "wrong" stories and "true," etc. Field work required. Cr 3.

ANE 615 Folklore and Region

This course will begin by introducing students briefly to the study of folklore, particularly in a regional context, and to the identification and analysis of folkloric "texts" broadly conceived. It will then proceed topically, examining regional folk culture as it relates to various of the elements that help comprise a regional identity: history, economic activity as it is constrained by the region, and the natural and humanly shaped physical environment. Attention will also be paid to variations in regional folk culture according to gender, ethnicity, and class. Each topic will include an extended examination of an example from New England as well as materials from other regions of the country. Cr 3.

ANE 620 Regional Writing and the Sense of Place

This course focuses on New England literature of place including fictional, historical, poetic, and autobiographical writing. It examines the subjective experience of place and the cultural perception and use of space. The course explores how memory, experience, and nostalgia connect individual and collective identity to place. It also offers some com-

parative perspectives on the sense of place in other American regions. Cr 3.

ANE 622 Food: History, Culture, Politics

This course will explore the history, culture, and politics of food in America with a special emphasis on New England and regional differences. The course will examine colonial food ways including diet, food theft, trade patterns, and regional diversity; 19th-century health, sanitation, and temperance reforms; the rise of cooking schools, food writing, and regional cuisine; and contemporary issues such as fast and slow food, terminator seeds, organic farming, and the diet industry. Cr 3.

ANE 625 The West and the American Imagination

A prominent historian has observed that for the last 100 years the "West has been America's most strongly imagined region." This course will examine the 19th- and 20th-century West as an historic place and as an imagined region. It will explore the historical, cultural, geographic, political, and economic patterns that define the West as a distinctive region and look at the West in relation to other regions, particularly New England. Students will also analyze the place of the West in the American imagination, focusing on how popular culture, in varied forms, has shaped our understanding of this region. Cr 3.

ANE 628 New England and the Sea

This course will examine the role of the sea in shaping New England society, culture, and thought. The course will focus on the "new maritime history"; literary and artistic responses to the sea; the economic importance of the sea for recreation and for the fishing industry; and efforts to preserve and interpret the region's maritime heritage. Cr 3.

ANE 629 Ethnicity in New England and America

This course explores the historic role of ethnicity in the formation of New England social life and cultural identity. Using a variety of texts and approaches, students will examine immigrant community life (including foodways, housing, leisure, and work), constructions of "race" and "whiteness," and the relationship between ethnicity and regional identity. Cr 3.

ANE 630 The Culture of Consumption

Focusing on New England and the emergence of industrial society, this course will explore popular forms of leisure, pleasure, and consumer culture in 19th- and 20th-century society. We will explore both popular writers such as P.T. Barnum and Edward Bellamy, as well as theorists as diverse as Thorstein Veblen and C. Wright Mills. Topics include: Victorian identity and consumption; the spa and the health club; rural peddlers; minstrelsy, burlesque, vaudeville, and melodrama; the rise of the department store; working-class style and the culture of wanting; advertising; the New England

woman and the Newport belle; the tourist and the commodification of New England. Cr 3.

ANE 633 The Mapping of New England

A study of the history of construction and use of cartographic representations of New England and Maine, to the end of the nineteenth century. The basic theme running through the course is that of cartographic literacy and commercialism: who used the maps and for what purposes? The course is structured around those cartographic modes (specific combinations of geographic knowledge, technological practices, social institutions, and cultural expectations) which have been relevant for New England. The scope of the course will expand to address, when necessary, more general issues in European and North American cartographic history. Cr 3.

ANE 635 Art and New England Culture

This course will examine painting, prints, and photography from the 17th through the 19th centuries; it will focus on New England art and its place in American art history. Students will study style and subject matter and their relation to literature, thought, and social history. Central to this course is the consideration of how region is “imaged” in the visual arts and how these images shape regional and national culture. Topics include: “reading” colonial portraits; landscape painting and the commodification of nature; race, ethnicity, and regional types; Winslow Homer and the masculinization of region; and imaging the New England woman at the turn of the century. Cr 3.

ANE 638 Reading the Cultural Landscape

This course will examine the New England and American human landscapes as texts which can be read to reveal cultural attitudes, values, priorities, and experiences. Emphasis will be on the analysis of ordinary landscapes of the sort which surround us every day. The course will focus on typical landscape “settings” or “compositions,” not necessarily on individual components within those landscapes: that is, domestic or residential landscapes, commercial landscapes, industrial landscapes, civic landscapes, historic landscapes, and so on. Cr 3.

ANE 641 Environment and Culture

This course is an interdisciplinary examination of the ways in which occupants of the North American continent, from the pre-contact period to the present, have conceived of and interacted with the natural environment. The history of human use of and attitudes toward the environment will be examined within a cultural context. Course materials will be drawn both from New England and from other regions of the country. Cr 3.

ANE 644 Twentieth-Century New England Politics

This course examines the politics of New England since 1900, with emphasis on conflicts among the distinct subcultures (White Anglo Saxon Protestant,

European-American, and African-American) which have given the region’s politics its particular flavor. Special attention will be given to two dramatic political events—the Sacco-Vanzetti case and the Boston busing controversy—in which these conflicts played a significant role. Cr 3.

ANE 645 Women and Popular Culture

The relationship between women and the public realm has always been a source of intense controversy and debate. This course will explore these controversies as they unfolded over the nineteenth and twentieth centuries, beginning with efforts by white and African-American women to speak in public and concluding with debates over female consumption of romance fiction and daytime television. Topics include: prostitution and commercialized leisure, vaudeville and the female spectacle, working class girls and popular culture, youth culture and courtship, celebrity culture, television, women in sports, and the gendered automobile age. Cr 3.

ANE 648 Domestic Architecture and American Culture

This course will examine the physical form as well as the idea and image of “home” from the 17th through the 20th centuries. House designs and styles and their historic changes and diversity across class and geographic boundaries will be examined. Students will also analyze the idea of home in visual culture (paintings, prints, photography, popular illustrations, film) and written texts (prose, architectural pattern books, advice books, magazines). Cr 3.

ANE 650 Topics in American and New England Studies

An in-depth study of a significant aspect of New England or American culture from an interdisciplinary perspective. Topics will vary from year to year. Recent topics have included: Native People of North America, Landmarks in American Nature Writing, and Women’s Captivity Narrative: Traditions and Transformations. Cr 3.

ANE 655 Historical Archaeology of New England

An examination of the role of historical archaeology in interpreting the past. Several important topics in regional contemporary historical archaeology will be examined including: exploration and settlement during the contact period, landscape research and reconstruction, ethnicity and social inequality, subsistence and food-ways, material culture studies, and the relationship between culture and consumption. Cr 3.

ANE 657 Language and Print Culture in America

This course will examine what various groups of Americans have been publishing and reading over time for purposes of education, edification, and entertainment, as well as the larger linguistic context in which those books have been produced. We will focus on questions of both the history of American

English and the history of the book in America, while also examining the specific nature of print as a medium of communication. Cr 3.

ANE 658 Visual Culture of 20th-Century America

This course will examine the production and circulation of visual images in twentieth-century American society, with a focus on the years 1900-1960. Students will examine varied image types, with an emphasis on painting, photography, advertising, and film, and how these images shaped the knowledge, experience, and culture of both New England and America. Cr 3.

ANE 660 New England Autobiography

This course examines 19th- and 20th-century New England autobiography; it focuses on works that illuminate aspects of regional experience. The readings represent diverse forms of autobiographical expression as well as essays that introduce contemporary approaches to the study of autobiography. The course emphasizes a historical-cultural reading of autobiography, relating issues of style, self-representation, the life cycle, gender, class, ethnicity, and place to particular historical contexts and cultural needs. Cr 3.

ANE 665 Sex in New England

This course will explore changes in the meaning and place of sexuality in American life and in the shaping of New England's identity and culture. Exploring primary and secondary sources, we will look at Puritan family life (and not so "puritanical" sexual behaviors), the sexual politics of witchcraft, divorce in colonial society, Utopian free love campaigns, same-sex intimacy and the conjoined emergence of homosexuality and heterosexuality, gay urban culture, the Boston marriage and the female world of love and ritual, commercialized sex and antiprostitution activity, rural vice campaigns, youth culture, literary sexology, the sexual revolution, and contemporary sexual politics. Cr 3.

ANE 668 Writers of Northern New England

This course focuses on literature about the subregion that Robert Frost referred to as "north of Boston." The course will examine writers who root their work in the landscape, culture, and history of Maine, New Hampshire, and Vermont. Considerable attention will be devoted to contemporary writing. Cr 3.

ANE 670 Museums and Public Culture

This course will examine the role of museums, preservationists, and collectors in shaping cultural

identities and public memories in 19th- and 20th-century America. Topics will include: ethnographic collections and displays, fine arts museums and patrons, traditions of human display (such as 19th-century "freak shows"), history, anthropological and natural history museums, festivals, living history sites, and the narrative role of collections, artifacts, and museum design. Cr 3.

ANE 675 Workshop in Research and Writing

This course explores various modes of critical writing as they relate to contemporary practices and debates in American studies. It is run as a collaborative workshop; students will read and comment on drafts of each other's papers as a central element of the process of revision. By semester's end, students will have produced an extensive research paper or a thesis chapter. This course is required for students writing a thesis or project, but is also open to all students who have completed at least 15 hours of coursework. Prerequisite: 15 credits completed in the ANES program, including ANE 600 and ANE 610. Cr 3.

ANE 685 Reading and Research

Open to advanced students with exceptional records in the program, this course offers opportunities for reading and research under the direction of a faculty member. The approval of the ANES Curriculum Committee is required. This course may be taken only once. Cr 3.

ANE 687 Internship

Open to qualified students with exceptional records in the program; required for students in the Public Culture and History track. Internships are by application to the ANES Curriculum Committee. Participating organizations include, but are not limited to, the Portland Museum of Art, Old York Historical Society, Pejepscot Historical Society, and Maine Historical Society. Pass/fail. Cr 3-6.

ANE 690 Project

Completion of a two-semester project that may be an independent project or that may combine independent study and work in a historical society, a museum, a cultural organization, or other public or private institution. In consultation with an advisor, the student defines and develops the project in relation to his or her particular interest in American and New England Studies. Cr 6.

ANE 695 Thesis

The product of original research, the thesis should embody an interdisciplinary combination of approaches and/or materials. Cr 6.

Master of Science in Biology

Coordinator: Jeffrey A. Walker

Professors: Gaine, Mazurkiewicz, Weber; *Associate Professors:* Champlin, Knight, Maher, Moore, O'Mahoney-Damon, Theodose, Walker; *Assistant Professor:* Currie; *Adjunct Professors:* Dionne, Duboise, Evers, D. Harris, Incze, Levine, Ng, Stockwell, Wilson, Wise

Program Description

The M.S. program in biology at USM is designed to meet diverse student interests and to provide additional preparation for careers in biology. The program is aimed at three groups: 1) students who wish to continue the scholarly pursuit of biology and possibly continue with a Ph.D. or M.D.; 2) students desiring laboratory or field experience to make them more competitive for employment; and 3) students who teach, or wish to teach, at the secondary, community college, or technical college levels.

To meet these needs, the M.S. program in biology offers a breadth of coursework, and a thesis requirement with an individualized approach. Coursework and research opportunities span the subdisciplines of cell and molecular biology, developmental biology, evolutionary genetics, physiology (animal, plant, and microbial), ecology (animal, plant, and microbial), and environmental science.

The student master's thesis, tailored to individual interests and falling within the research subdiscipline of a faculty mentor, is intended to provide experience in scientific investigation. Students are exposed to the current state of knowledge within the subdiscipline, and learn skills necessary for creative scientific inquiry. These include exploration and evaluation of the scientific literature, experimental design, implementation of original laboratory or field-based research, statistical analysis of data, and the writing of a publishable scientific paper.

Admission

Admission to the M.S. program in biology is competitive and has two basic requirements. First, applicants should have earned a baccalaureate degree from an accredited institution, preferably in some area of biology, with a minimum GPA equivalent to 3.0. Second, admission is also dependent upon a faculty member agreeing to serve as the primary faculty advisor to the student. Therefore, before applying to the program, students must become acquainted with the research interests of individual faculty in or adjunct to the Department of Biological Sciences (www.usm.maine.edu/bio) and contact those faculty members to discuss the possibility of working with them in the M.S. program in biology and identify the faculty member(s) in their essay.

Students who do not meet the first criterion, but who demonstrate exceptional promise, may be granted conditional admission, during which time they must compensate for any specific deficiency as determined by the Biology Graduate Admissions Committee. Upon successful completion of the conditions, conditional students can be granted regular admission status.

Application Materials

In addition to the materials described in the Admissions chapter of this catalog, applicants must submit the following information:

1. *Test scores* Official scores from the General Test of the Graduate Record Examination (GRE) are required. Official scores from the GRE Subject Test in Biology are recommended.
2. *Transcripts* Official undergraduate and graduate transcripts are required from any college or university attended.
3. *Essay* The essay should discuss your academic goals and anticipated research interests, and should include the name(s) of specific faculty members with whom you might like to work.
4. *Letters of recommendation* Three letters of recommendation are required from people who can evaluate your potential for success in a master's program in the biological sciences.

Application Deadlines

Applications and supporting materials must be received by February 1 in order to receive priority status for fall admission and consideration of departmental financial support. The application deadline for spring admission is October 15. Students applying for spring admission are less likely to obtain graduate assistantships in their first semester, because most financial aid will be distributed during fall admissions.

Program Policies

In addition to the general policies described in the Academic Policies chapter, this program also includes the following policies.

Transfer credits Graduate students may transfer a maximum of 9 graduate credits, earned within the past 5 years, with a grade of B- or better. Approval of transfer credits must be requested at the time of admission.

Time limit All courses for the M.S. degree must be completed within 5 years from the time of first matriculation. Students may apply to the program graduate coordinator for an extension, which must be approved by the Department graduate faculty.

Grade policy Students must earn a grade of B- or better for courses to count toward the M.S. degree. If the cumulative GPA drops below 3.0, the student will be placed on probation. Terms and conditions of probation will be determined by the student's Advisory Committee in consultation with the Office of Graduate Studies.

Eligibility for Financial Aid During Thesis Completion Stage

To be eligible for federal financial aid (including deferment of student loans), a matriculated student must be enrolled in a minimum of 6 graduate credits in the master's degree program. However, a student who has completed coursework and is engaged in finishing his/her thesis will be considered eligible if he/she meets *one* of the following conditions:

- Is enrolled in at least 6 graduate credits
- or**
- Is enrolled in less than 6 graduate credits, has obtained certification of satisfactory progress from the chair of his/her thesis committee, indicating that the student is actively progressing in the work leading to completion of the master's degree, *and* is registered for GRS 602 (*see course description at the end of this chapter*).

Program Requirements

During the first semester, students are required to declare a research topic and to arrange an Advisory Committee, with guidance from their primary faculty advisor. The Advisory Committee consists of the student's primary faculty advisor and at least two other faculty members, of which at least one must be a member of the Department of Biological Sciences.

The degree provides two thesis options: research and literature review. Most students are expected to produce a research thesis, based on an original research project. However, with approval of the student's Advisory Committee, a student may undertake the literature review thesis option, which requires writing a comprehensive analysis of a specific topic. All master's candidates preparing a research thesis must complete a minimum of 24 credits of coursework and 6 credits of thesis research. Candidates completing the literature review thesis option must complete 32 credits of coursework, which must include at least one laboratory course, and 3 credits of literature review. Coursework is determined individually for each student in consultation with the student's Advisory Committee.

All students must take four required courses (15-18 credits):

AMS 545	Applied Biostatistical Analysis
or	
STA 588	Introduction to Biostatistics
BIO 601	Research Methods in Biology
BIO 621	Graduate Seminar (minimum of 2 required)
BIO 698	Thesis Research
or	
BIO 699	Literature Review

Students also choose electives. To maintain breadth, electives are required in at least two of three areas (selecting from Genetics and Molecular Biology, Physiology, and Ecology and Evolution). Upon approval of the Advisory Committee, students also may take graduate-level courses in other departments.

At the end of the program, the thesis or literature review must be written in a form satisfactory to the Advisory Committee and suitable for submission to a peer-reviewed scientific journal, and the results must be presented in a seminar open to faculty, students, and the public. After the presentation, the student and Advisory Committee will meet to discuss details of the project, paper, and seminar.

The following courses satisfy the three program areas. Also, courses from other departments, specifically the Chemistry Department and Applied Medical Sciences Department, may satisfy some of the program areas.

Genetics and Molecular Biology

- BIO 507 Molecular Mechanisms of Animal Development
- BIO 508 Experimental Genetics
- BIO 509 Cell and Molecular Biology
- BIO 510 Cell and Molecular Biology Laboratory

Physiology

- BIO 501 General Physiology
- BIO 502 General Physiology Laboratory
- BIO 503 Comparative Physiology
- BIO 504 Comparative Physiology Laboratory
- BIO 545 Advanced Pathophysiology
- BIO 611 Endocrinology
- BIO 615 Plant Metabolism

Ecology and Evolution

- BIO 505 Animal Behavior
- BIO 506 Animal Behavior Laboratory
- BIO 511 Estuarine Ecology
- BIO 515 Microbial Ecology
- BIO 516 Microbial Ecology Laboratory
- BIO 517 Issues in Evolution

Laboratory Fees

Laboratory fees are assessed in biology laboratory courses to cover the cost of supplies and materials.

BIO 501 General Physiology

A study of physiological processes and their regulation in animals. Cr 3.

BIO 502 General Physiology Laboratory

Laboratory examination of physiological mechanisms in animals. Cr 2.

BIO 503 Comparative Physiology

Physiological and biochemical basis of environmental adaptation. Cr 3.

BIO 504 Comparative Physiology Laboratory

Laboratory experiments on the physiological basis of environmental adaptation. Emphasis is on marine organisms. Cr 2.

BIO 505 Animal Behavior

This course is a study of the principles of behavioral organization in vertebrate and invertebrate animals, with emphasis on behavior under natural conditions. Cr 3.

BIO 506 Animal Behavior Laboratory

This course is a laboratory and field examination of behavioral principles in animals. Cr 2.

BIO 507 Molecular Mechanisms of Animal Development

A molecular genetic analysis of animal development focusing on an integrative approach toward understanding the evolution of developmental mechanisms. Cr 3.

BIO 508 Experimental Genetics

This course includes both lectures and laboratory exercises in human and fruit fly genetics. Cr 2.

BIO 509 Cell and Molecular Biology

A study of the eukaryotic cell at the level of organelles and molecules. The biochemical aspects of cell growth and reproduction are emphasized. Cr 3.

BIO 510 Cell and Molecular Biology Laboratory

A course in which the techniques of cell fractionation and biochemical analyses are applied to the eukaryotic cell. Cr 2.

BIO 511 Estuarine Ecology

Integrated lecture/field laboratory course focused on interactions determining the distribution and abundance of life in estuaries. Cr 3.

BIO 515 Microbial Ecology

This course is a continuation of the basic microbiology course (BIO 311). The course begins with an examination of microbial evolution and biodiversity, and explores the interactions of microorganisms in populations and communities, with other organisms, and with the environment, including an examination of physiological adaptations and biogeochemical cycles. Cr 3.

BIO 516 Microbial Ecology Laboratory

This companion lab course to BIO 515 Microbial Ecology is designed as a hands-on project lab to introduce students to a variety of methods used in microbial ecology. There are field, lab, and written components to the projects that will be carried out over the semester. Microscopic, cell culture, and molecular methods will be employed. Cr 2.

BIO 517 Issues in Evolution

This course surveys major issues that motivate current research in evolutionary biology, providing a historical analysis of active areas of controversy and alternative points of view. The course is based on selected readings in the theoretical and experimental literature of the field, from primary and classical sources. Cr 3.

BIO 545 Advanced Pathophysiology

This course is a study of physiological, genetic, biochemical, and environmental basis of diseases. Systems to be covered include reproductive, gastrointestinal, respiratory, cardiovascular, nervous, and skeletomuscular. Cr 3.

BIO 601 Research Methods in Biology

This course introduces students to faculty members' research. Students will study the philosophy of science, experimental design, data analysis and interpretation, and writing and assessment of scientific papers. Cr 3.

BIO 602 Ethical Issues in Biology

This course examines a variety of ethical issues arising in biology today, including those related to general scientific research, biotechnology, medicine, and the environment. Cr 2.

BIO 611 Endocrinology

This course examines hormone action in animals and plants at the molecular, cellular, organ, and organismal levels. Topics will include the endocrine control of development, behavior, and physiological processes. Cr 3.

BIO 615 Plant Metabolism

This is an advanced course on the regulation and integration of metabolism as viewed from a whole plant perspective. The course deals with primary metabolic pathways such as respiration, photosynthesis, nitrogen metabolism, and carbohydrate and lipid biosynthesis. Compartmentation of metabolic pathways and communication between cells, tissues, and organs via transport systems are discussed. Cr 3.

BIO 621 Graduate Seminar

This course reviews the literature pertinent to topics of biology. It may be repeated for credit as topics vary. Graduate students must complete at least two different seminars. Cr 1-3.

BIO 650 Internship

In this course, students apply their learning to a

practical context under supervision of a faculty member. Cr 1-3.

BIO 660 Graduate Independent Study

Independent work on a special topic as arranged by the student, advisor, and committee. Cr 1-6.

BIO 698 Thesis Research

This course involves thesis research and preparation. It may be repeated for credit, but no more than 6 cred-

its will apply to the degree. Enrollment is required each term in which the thesis is in progress. Cr 1-6.

BIO 699 Literature Review

This course involves preparation of a review paper based on current biological literature. Prerequisite: permission of the graduate advisor. Cr 1-6.

GRS 602 Thesis Completion

See the complete course description in the "Continuous Enrollment and Residency" section of the Academic Policies chapter. Cr 1.

Stonecoast Master of Fine Arts in Creative Writing

Director: Annie Finch

Associate Director: Robin Talbot

The Stonecoast low-residency M.F.A. program in creative writing draws on a faculty of nationally known writers of creative nonfiction, fiction, poetry, and popular fiction from across the United States. The M.F.A. is a two-year program, alternating intensive 10-day residencies with six-month independent writing projects supervised by faculty writers/mentors. The M.F.A. offers an interdisciplinary curriculum, including creative nonfiction, novel, poetry, popular fiction, and short story, with possibilities for elective work in such areas as writing for stage and screen, performance, writing about nature, and writing for young adults.

Low-residency programs give students significant flexibility in pursuing graduate work as they do not require a day-to-day presence on campus. The master of fine arts requires attendance at two 10-day residencies per year for two years. These residencies are considered the beginning of each semester. Residencies are held at the historic Stone House on the Maine coast and taught by faculty and visitors of national reputation who meet with students for a series of workshops, presentations, conferences, and readings. The winter residency will be held in January and the summer residency in July.

The Stonecoast M.F.A. also requires students to complete four semesters of intensive long-distance work with a faculty mentor/writer. Each semester following the residency, at prearranged intervals, students send packets of creative writing and critical essays to their mentors by mail or e-mail. Faculty respond with extensive, in-depth critiques of the student work.

Students complete a third-semester project in one of six emphases (craft, creative collaboration, publishing, social action, teaching, and theory) and write a creative thesis in their third and fourth semesters. Students must also attend a final graduation residency at which they give a reading of their work and participate in a panel or teach a class. Occasionally, leaves of absence will be approved for a maximum of two semesters.

Admission is highly selective; students will be accepted on the basis of manuscript samples and past educational experience in creative writing. Applications for the two annual admissions cycles are due on September 1 and February 1. Later applications may be considered in exceptional cases or until all places are filled.

The cost of the low-residency graduate writing program is \$5,998 per semester plus USM's unified fee and room and board. Tuition is subject to change without notice; however, we will post information about tuition changes as soon as it is available. There are openings in the program for commuter students. The fee structure for this long-distance learning program is separate from the usual USM graduate tuition. The M.F.A. does not charge a higher rate for out-of-state students. Some scholarships are available.

For further information, contact the Office of Graduate Admissions at (207) 780-4386 or gradstudies@usm.maine.edu, or the Stonecoast M.F.A. office at (207) 780-5262.

Each student must complete four workshop residencies and four semester projects along with a fifth graduation residency.

CRW 501 Residency Course I

An advanced workshop that focuses on the development of the student's writing through the use of faculty-guided workshops and topical seminars, round tables, panels, and readings, and discussion of major traditional and contemporary work in the genre. Workshop tracks include poetry, fiction, nonfiction, or popular fiction. Students are expected to submit an "in-progress" manuscript in advance of the residency. The manuscript(s) submitted will be analyzed during the faculty-guided workshops. Cr 6.

CRW 510 Poetry Semester Project I

The focus of this course, which immediately follows the first residency, is on the completion of a negotiated study plan developed between the student and the faculty member. As part of the study plan, students will be expected to exchange five packets of manuscripts with the faculty mentor. The packets will vary depending on the study track, but should include both creative work and critical annotations of readings. The faculty mentor will then respond with constructive critiques for revision as well as additional reading suggestions and relevant observations on craft and theory. Prerequisite: CRW 501. Cr 9.

CRW 520 Fiction Semester Project I

The focus of this course, which immediately follows the first residency, is on the completion of a negotiated study plan developed between the student and the faculty member. As part of the study plan, students will be expected to exchange five packets of manuscripts with the faculty mentor. The packets will vary depending on the study track, but should include both creative work and critical annotations of readings. The faculty mentor will then respond with constructive critiques for revision as well as additional reading suggestions and relevant observations on craft and theory. Prerequisite: CRW 501. Cr 9.

CRW 530 Creative Nonfiction Semester Project I

The focus of this course, which immediately follows the first residency, is on the completion of a negotiated study plan developed between the student and the faculty member. As part of the study plan, students will be expected to exchange five packets of manuscripts with the faculty mentor. The packets will vary depending on the study track, but should include both creative work and critical annotations of readings. The faculty mentor will respond with constructive critiques for revision as well as additional reading suggestions and relevant observations on craft and theory. Prerequisite: CRW 501. Cr 9.

CRW 540 Popular Fiction Semester Project I

The focus of this course, which immediately follows the first residency, is on the completion of a negotiated study plan developed between the student and the faculty member. As part of the study plan, stu-

dents will be expected to exchange five packets of manuscripts with the faculty mentor. The packets will vary depending on the study track, but should include both creative work and critical annotations of readings. The faculty mentor will respond with constructive critiques for revision as well as additional reading suggestions and relevant observations on craft and theory. Prerequisite: CRW 501. Cr 9.

CRW 502 Residency Course II

This course is considered to be the completion of the first year's residency requirements. See description of Workshop Residency I. Prerequisites: CRW 501 and completion of Semester Project I in student's chosen genre. Cr 3-6.

CRW 512 Poetry Semester Project II

The focus of this course, which immediately follows the second residency, is on the completion of a negotiated study plan developed between the student and the faculty member. As part of the study plan, students will be expected to exchange five packets of manuscripts with the faculty mentor. The packets will vary depending on the study track, but should include both creative work and critical annotations of readings. The faculty mentor will respond with constructive critiques for revision as well as additional reading suggestions and relevant observations on craft and theory. Prerequisite: CRW 502. Cr 9.

CRW 522 Fiction Semester Project II

This course immediately follows the second residency. The course focus is on the completion of a negotiated study plan developed between the student and the faculty member. As part of the study plan, students will be expected to exchange five packets of manuscripts with the faculty mentor. The packets will vary depending on the study track, but should include both creative work and critical annotations of readings. The faculty mentor will respond with constructive critiques for revision as well as additional reading suggestions and relevant observations on craft and theory. Prerequisite: CRW 502. Cr 9.

CRW 532 Creative Nonfiction Semester Project II

The focus of this course, which immediately follows the second residency, is on the completion of a negotiated study plan developed between the student and the faculty member. As part of the study plan, students will be expected to exchange five packets of manuscripts with the faculty mentor. The packets will vary depending on the study track, but should include both creative work and critical annotations of readings. The faculty mentor will respond with constructive critiques for revision as well as additional reading suggestions and relevant observations on craft and theory. Prerequisite: CRW 502. Cr 9.

CRW 542 Popular Fiction Semester Project II

The focus of this course, which immediately follows the second residency, is on the completion of a negotiated study plan developed between the student and

the faculty member. As part of the study plan, students will be expected to exchange five packets of manuscripts with the faculty mentor. The packets will vary depending on the study track, but should include both creative work and critical annotations of readings. The faculty mentor will respond with constructive critiques for revision as well as additional reading suggestions and relevant observations on craft and theory. Prerequisite: CRW 502. Cr 9.

CRW 601 Residency Course III

This course is considered to be the first half of the second year's program. See description of Workshop Residency I. Prerequisite: CRW 502 and completion of Semester Project II in the student's chosen genre. Cr 3-6.

CRW 610 Poetry Semester Project III

The focus of this course, which immediately follows the third residency, is on the completion of a negotiated study plan developed between the student and the faculty member. Each student undertakes a special project under the guidance of the mentor in one of five concentrations: craft, literary theory, interdisciplinary artistic collaboration, publishing, or literacy/community services. Prerequisite: CRW 601. Cr 9.

CRW 620 Fiction Semester Project III

The focus of this course, which immediately follows the third residency, is on the completion of a negotiated study plan developed between the student and the faculty member. Each student undertakes a special project under the guidance of the mentor in one of five concentrations: craft, literary theory, interdisciplinary artistic collaboration, publishing, or literacy/community services. Prerequisite: CRW 601. Cr 9.

CRW 630 Creative Nonfiction Semester Project III

The focus of this course, which immediately follows the third residency, is on the completion of a negotiated study plan developed between the student and the faculty member. Each student undertakes a special project under the guidance of the mentor in one of five concentrations: craft, literary theory, interdisciplinary artistic collaboration, publishing, or literacy/community services. Prerequisite: CRW 601. Cr 9.

CRW 640 Popular Fiction Semester Project III

The focus of this course, which immediately follows the third residency, is on the completion of a negotiated study plan developed between the student and the faculty member. Each student undertakes a special project under the guidance of the mentor in one of five concentrations: craft, literary theory, interdisciplinary artistic collaboration, publishing, or literacy/community services. Prerequisite: CRW 601. Cr 9.

CRW 602 Residency Course IV

This course is considered to be the second half of the second year's program. See description of Workshop Residency I. Prerequisite: CRW 601 and completion of Semester Project III in the student's chosen genre. Cr 3-6.

CRW 612 Poetry Semester Project IV

The focus of this course, which immediately follows the fourth residency, is on the completion of a negotiated study plan developed between the student and the faculty member. Each student completes a book-length creative thesis, and prepares for the student reading and for the teaching of a seminar or panel presentation during the fifth and final graduation residency. Prerequisite: CRW 602. Cr 9.

CRW 622 Fiction Semester Project IV

The focus of this course, which immediately follows the fourth residency, is on the completion of a negotiated study plan developed between the student and the faculty member. Each student completes a book-length creative thesis, and prepares for the student reading and for the teaching of a seminar or panel presentation during the fifth and final graduation residency. Prerequisite: CRW 602. Cr 9.

CRW 632 Creative Nonfiction Semester Project IV

The focus of this course, which immediately follows the fourth residency, is on the completion of a negotiated study plan developed between the student and the faculty member. Each student completes a book-length creative thesis, and prepares for the student reading and for the teaching of a seminar or panel presentation during the fifth and final graduation residency. Prerequisite: CRW 602. Cr 9.

CRW 642 Popular Fiction Semester Project IV

The focus of this course, which immediately follows the fourth residency, is on the completion of a negotiated study plan developed between the student and the faculty member. Each student completes a book-length creative thesis, and prepares for the student reading and for the teaching of a seminar or panel presentation during the fifth and final graduation residency. Prerequisite: CRW 602. Cr 9.

CRW 603 Graduation Residency

This residency is the culmination of the M.F.A. in creative writing degree program. Prior to the residency, a student must have submitted a creative thesis deemed by a faculty committee to be of publishable quality. At the residency, the student must lead a presentation or participate in a panel on an issue of craft, theory, publishing, teaching/pedagogy, interdisciplinary artistic collaboration, or literacy/community services. The student must also give a public reading from the creative thesis. Prerequisite: completion of Semester Project IV in the student's chosen genre. Cr 0.

Master of Music in Composition

Master of Music in Conducting

Master of Music in Jazz Studies

Master of Music in Music Education

Master of Music in Performance

Director, School of Music: E. Scott Harris

Professors: Fithian, Kargul, Martin, Russell; *Associate Professors:* Chickering, Harris, Kaschub, Keef, Parchman; *Assistant Professors:* Christiansen, Lehmann, Oberholtzer, Owens, Sonenberg

The University of Southern Maine School of Music offers music degrees in composition, conducting, jazz studies, music education, and performance. The School of Music is a fully-accredited member of the National Association of Schools of Music. With more than 55 full-time, part-time, and artist faculty, its impact on the cultural life of New England can be found in all areas of musical activity, from the elementary teacher to the professional performer. One will find USM School of Music graduates teaching on every level from pre-school to graduate school. Their expertise as teachers and/or performers is highly regarded and in great demand.

Admission

Contact the USM Office of Graduate Admissions for an application and instructions. Visit Graduate Admissions online at: www.usm.maine.edu/grad.

Every applicant for admission must submit:

- An application form.
- The application fee.
- Official transcripts of all previous college and university work.
- An essay of 300-500 words on your professional goals
- A professional résumé

In addition applicants to the School of Music graduate program must fulfill the following requirements prior to enrollment:

- A baccalaureate degree or its equivalent in music or music education
- An audition (by invitation only; see details below). Music education applicants submit additional materials in lieu of an audition.
- For studies in music education or conducting, one year or its equivalent of full-time teaching or conducting experience.

Applicants in *composition* must also submit:

- Scores of three representative works from three different performance media showing originality and technical competence.
- Recordings (CD, cassette, and/or VHS videotape) of three representative works (to correspond with scores above if possible).
- Complete list of works with first performances arranged chronologically.

Applicants in *conducting* must also submit:

- A videotape which contains at least 15 minutes of conducting, at least one-half of which should be of a performance.
- A representative repertoire of works performed.

Applicants in *jazz studies* must also submit:

- A representative repertoire of works performed.
- A recent recording that contains at least fifteen minutes of a live performance including a demonstration of your improvisational abilities.

Applicants in music education must also submit:

- A videotape that contains a 10-15 minute teaching sequence from a classroom or rehearsal setting. Videotapes of concert performances will not be accepted.
- A written, critical analysis of the teaching episode on the videotape.

- An essay of 1,000 words on a current topic in music education.
- Evidence of a baccalaureate degree or its equivalent in music education.

Applicants in performance must also submit:

- A complete repertoire, specifying those works that have been performed.
- A recent recording of a live performance.
- *Voice only* Show evidence of completion of two semesters or equivalent of undergraduate Italian and two semesters or equivalent of either undergraduate French or German; show evidence of completion of undergraduate courses in Italian, French, and German diction.

Music Audition

Once the Office of Graduate Admissions application is complete, the School of Music Graduate Studies Committee will review the materials and make a recommendation to the School's coordinator of graduate studies. The coordinator of graduate studies will contact applicants selected for an audition. Applicants will take a sight singing exam at the time of the audition. Each degree program has specific audition requirements outlined below. Acceptance into an area of study is exclusive to that area, and a separate application and audition is required for each area. Due to the intensive and individualized nature of a graduate program in music, admission in specific areas will be limited.

The *composition* audition:

A test of keyboard skills, ear training, and score reading is required.

The *conducting* audition:

Required

Choral: prepare a musical score(s) of at least 10 minutes duration, know its musical structure and be able both to conduct it, and to sing any musical line.

Orchestral: prepare the first movement of a Beethoven symphony, know its structure, and be able to conduct it.

Wind: prepare the Ralph Vaughan Williams "Folk Song Suite," know its musical structure, and be able to conduct it and to sing any musical line

Optional

Choral: play at the piano the following: a five-minute piece of at least the level of difficulty of a Clementi sonatina; all major and minor scales, hands together, two octaves; a Bach chorale at sight; "My country 'tis of Thee" in all keys with an improvised accompaniment of I, IV, V chords; sing two art songs, one in Italian and one in English.

Instrumental: perform a five-minute piece on an instrument of the applicant's choice that demonstrates a level of competence equivalent to a BM on that instrument.

Preference will be given to conductors who have performance expertise.

The *jazz studies* audition:

Prepare a 15-minute performance of jazz repertoire that is diverse in style and that shows improvisational abilities.

The *performance* audition:

Organ: perform three major works: one of J. S. Bach and one each from the 19th and 20th centuries; sight read an organ composition at the level of a Rheinberger trio.

Percussion: Timpani: play either an étude from Solo Timpanist (Vic Firth) or March (Carter); Drum: play an étude from First 12 Études for Snare Drum (Deleceuse); Mallets: play a 4-mallet solo and 3 orchestral excerpts.

Piano: perform from memory a major work of J. S. Bach (such as a suite, toccata, or prelude and fugue from the Well Tempered Clavier); a complete sonata by either Haydn, Mozart, or Beethoven; a major work from the 19th or 20th century; sight read a piano composition at the level of a Haydn sonata.

Strings: perform the first movement (or equivalent) of a standard concerto (with cadenza); perform one movement from a 19th or 20th century sonata; perform two contrasting movements from an unaccompanied work by Bach. It is recommended that at least one of the three excerpts be memorized.

Harp and guitar performers may substitute an advanced étude of their choice for one of the above categories.

Winds: perform a complete concerto or sonata from the Classical era; perform one composition each from the 19th and 20th centuries; perform six standard orchestral excerpts.

Voice: perform a 20-minute memorized recital of repertoire from various stylistic periods, including selections in Italian, French, German, and English; play at the piano the following chord progression: I, IV, V, I in all keys up to three sharps and three flats.

Information for Matriculated Students

Graduate Competency Exams

All incoming School of Music graduate students must pass competency exams in music theory, eartraining, and music history and literature. Composition majors will take an additional exam in orchestration. These exams will be graded pass/fail. Each exam may be taken no more than three times. Students unable to pass after three attempts must withdraw from the program.

Exit Requirements

Exit requirements are specific to each program. Please consult the faculty advisor in these programs for a list of requirements.

Special Requirements and Standards

All music graduate programs must be completed within six years from the date of matriculation.

Students must maintain a B average in all course work and must have no grade lower than B-. Students who receive grades lower than B- will be reviewed for retention in the graduate program. Jury reviews are scheduled each semester for majors in performance and jazz studies. Consult the School of Music for policies on jury review.

Each program requires that students demonstrate mastery in their primary area of study. Master of Music in music education students meet this requirement through the preparation of a professional portfolio or thesis. All other students meet this requirement through the presentation of one or more recitals. Consult the individual requirements below for more details.

The following conditions will apply to all recitals:

- Required recitals must be performed prior to taking the comprehensive exams
- Grading of the recital will be by a committee of no less than three jurors. The jurors will be drawn from the graduate faculty, the degree candidate's graduate advisor, and the degree candidate's private instructor.
- The candidate must receive a grade of B or higher on each recital. If the grade of B is not achieved, the candidate must perform another recital that contains at least 50 percent new material. If the grade of B or higher is not achieved at this recital retake, the candidate must petition the faculty to remain in the degree program.

Transfer credit Six graduate credits may be transferred to USM from another NASM-accredited college or university.

Admissions credit Additionally no more than six graduate credits for work earned at USM in the five years prior to matriculation may be credited to the master's degree.

Residency A one-year residency is required for wind and orchestral conducting, jazz, and most performance programs. Composition requires a two-year residency. Residency is not required in music education and choral conducting.

Programs of Study

Graduate Music Core Courses

All master of music students are required to take the following courses:

			<i>Credits</i>
MUS	520	Seminar in Music History	3
MUS	530	Seminar in Music Theory	3

All master of music students except those in music education are required to take the following course, and are advised to take it early in their course of study:

MUS	510	Bibliography and Research in Music	3
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Composition

Requires a minimum of 30 credit hours

MUP	603	Applied Music (composition)	12
MUP	690	Recital	0

MUS 526	Composition (20th Century Survey)	3
	Graduate music core courses	9
	Electives—Any MUS, MUP or MUE 500- or 600-level courses.	6

A two-year residency is required.

In addition to the general competency exams in history and theory, students in composition will be tested in all aspects of orchestration.

Composition majors must present one 60-minute lecture/recital in which program notes and compositional process are shared with the audience as verbal introductions to each work. The recital comprises 40 minutes of original music for a variety of mixed media composed while in residency for the degree. The composer will participate as performer on at least one work on the recital. In addition to the recital, the composer is encouraged to seek performances for his/her work elsewhere; only in exceptional cases might any part of this recital be substituted for outside work.

Conducting—Choral

Requires a minimum of 31 credit hours		<i>Credits</i>
MUP 603	Applied Music (choral conducting)	9
MUP 690	Recital	0
MUS 501	Chorale (2 sem.) or	1
MUS 505	Chamber Singers (2 sem.)	1
MUS 533	Advanced Analysis of Tonal Music	3
MUS 535	Advanced Aural Skills	3
	Graduate music core courses	9
	Electives—Any MUS, MUP, or MUE 500- or 600-level courses	6

Nine credits of applied music in choral conducting (three 3-credit courses) will be scheduled as private lessons and will be supplemented by rehearsal time with one of the University choral ensembles or other appropriate ensemble. Three substantial topics will be covered during the course of the applied study: choral-orchestral conducting, a research project to create a detailed program note, and a repertoire list.

The culmination of applied study in choral conducting will be a recital or its equivalent of at least 40 minutes of music. The ensemble for the recital and the recital program must be approved by the major advisor.

Conducting—Orchestral

Requires a minimum of 31 credit hours		<i>Credits</i>
MUP 603	Applied Music (orchestral conducting)	9
MUP 690	Recital	0
MUS 500	Orchestra (2 sem.)	1
MUS 533	Advanced Analysis of Tonal Music	3
MUS 535	Advanced Aural Skills	3
	Graduate music core courses	9
	Electives—Any MUS, MUP, or MUE 500- or 600-level courses	6

Nine credits of applied music in orchestral conducting (three 3-credit courses) will be scheduled as private lessons and will be supplemented by rehearsal time with the University Orchestra or other appropriate ensemble. A one-year residency is required.

The culmination of applied study in orchestral conducting will be a recital or its equivalent of at least 40 minutes of music. The ensemble for the recital and the recital program must be approved by the major advisor.

Conducting—Wind

Requires a minimum of 31 credit hours		<i>Credits</i>
MUP 603	Applied Music (wind conducting)	9
MUP 690	Recital	0
MUS 502	Concert Band (2 sem.) or	1
MUS 508	Wind Ensemble (2 sem.)	1
MUS 533	Advanced Analysis of Tonal Music	3
MUS 535	Advanced Aural Skills	3
	Graduate music core courses	9
	Electives—Any MUS, MUP, or MUE 500- or 600-level courses	6

Nine credits of applied music in wind conducting (three 3-credit courses) will be scheduled as private lessons and will be supplemented by rehearsal time with the Concert Band, Wind Ensemble or other appropriate ensemble. A one-year residency is required.

The culmination of applied study in wind conducting will be a recital or its equivalent of at least 40 minutes of music. The ensemble for the recital and the recital program must be approved by the major advisor.

Jazz Studies

Requires a minimum of 30 credit hours			<i>Credits</i>
MUP	603	Applied Music (jazz studies)	9
MUP	690	Recital	0
MUS	506	Chamber Music (jazz)	1
MUS	507	Jazz Ensemble	1
MUS	682	Chamber Jazz Ensemble Evolution and Analysis	2
MUS	683	Large Jazz Ensemble Evolution and Analysis	2
Graduate music core courses			9
Electives—Any MUS, MUP or MUE 500- or 600-level courses.			6

Nine credits of applied music in jazz studies (three 3-credit courses) will be scheduled as private lessons. These studies will be supplemented with two semesters of performance in a chamber jazz ensemble and two semesters of performance in a large jazz ensemble.

Students must present one recital for completion of their degree program. The recital will be comprised of no less than 60 minutes of repertoire which features the candidate as a soloist. The ensemble and the repertoire must be approved by the program advisor and/or the private instructor.

In addition to the general exit examinations in music history and music theory, candidates will be tested on topics in jazz studies. Sample questions are available for review and study.

Music Education

Requires a minimum of 32 credit hours			<i>Credits</i>
MUE	611	Introduction to Research in Music Education	3
MUE	612	Philosophical Bases of Music Education	3
MUE	613	Psychology of Music Teaching and Learning	3
MUE	614	Curriculum Development and Assessment	3
MUE	615	The Professional Portfolio	2
or			
MUS	695	Thesis	2
Graduate music core courses			6
Electives—Any MUS, MUP, or MUE 500- or 600-level courses			9

The music education program is designed to be completed in three summers with the exception of the Seminar in Music History and Seminar in Music Theory, which will be offered as evening courses during the academic year. Students are required to assemble a Professional Portfolio (MUE 615) or Thesis (MUE 695) as a capstone project for the degree. There is no residency requirement.

Music Education Professional Portfolio Requirements All students entering the master's program in music education are required to develop and maintain a portfolio based on their master's degree experiences. Portfolios are a way to focus on higher order thinking processes such as finding and solving problems, generating hypotheses, determining adaptations and applications, and relating learning to larger contexts. Furthermore, portfolios function as an extraordinary tool for increasing the efficiency of learning as each entry represents not only accomplishment, but directions for future study.

As such, portions of the portfolio may be viewed at various points throughout the program as individual components are created within core music education courses. The portfolio will be presented in its totality during the final oral examination.

The portfolio will be comprised of three sections:

I. Oral Examination

The oral examination will be scheduled through the coordinator of graduate studies within the School of Music. The student will present the milestones and domain

project portions of the portfolio to the examination committee as the capstone experience of the degree program.

II: Milestones

The milestones portion of the portfolio is designed to encourage students to reflect on all coursework completed as part of the masters program. Students are encouraged to review all coursework and identify three experiences that have been particularly meaningful in shaping a personal understanding of music or music education and in influencing future study and practice. Students should create a 1-2 page description of each milestone and be prepared to discuss the significance of the milestones with the oral examination committee.

III: Domain Projects

In this section students are encouraged to draw upon their experiences within the master of music program to create a set of question and essay projects that evidence knowledge from three different domains of study. Each domain project is organized as a 10-15-page answer to a question designed by the student in conjunction with their major advisor. Questions should be created and approved during the second summer of study for students following the three-summer master's plan.

Question 1 must cover some topic related to one or more of the four core music education courses. Question 2 must draw on MUE 595 coursework and relate to the student's area of professional emphasis (i.e., general music, choral music, instrumental music, technology, composition, conducting, etc). Question 2 material must relate to at least one MUE 595 course and may relate to other coursework as well. Question 3 will address a topic that is of particular interest to the student and which demonstrates the student's ability to apply knowledge gained in the master of music program to good teaching practice. Each project should be thoroughly researched, organized, and presented in a professional manner.

Music Education Thesis Requirements Students completing thesis work as the capstone project for the M.M. in Music Education degree will formulate a research plan with the program advisor.

Performance—Brass/Percussion

Requires a minimum of 30 credit hours

	<i>Credits</i>
MUP 603 Applied Music (brass/percussion performance)	12
MUP 690 Recital (2)	0
MUS 521 Literature of the Major Instrument	2
MUS 500/501/ 508 Orchestra/Chorale/Wind Ensemble	1
Graduate music core courses	9
Electives—Any MUS, MUP, or MUE 500- or 600-level courses	6

Performance majors in the areas of brass and percussion must present two full-length recitals for completion of their degree program. The recitals will include at least 60 minutes of solo repertoire. Chamber music may be included and must be approved by the graduate advisor (and/or the private instructor). The candidate must be a featured soloist in the repertoire.

Performance—Organ

Requires a minimum of 30 credit hours

	<i>Credits</i>
MUP 603 Applied Music (organ performance)	12
MUP 690 Recital	0
MUS 506 Chamber Music and/or Accompanying	1
MUS 518 Organ Literature I*	2
MUS 519 Organ Literature II*	2
Graduate music core courses	9
Electives—Any MUS, MUP, or MUE 500- or 600-level courses	4

*Organ Literature I and II must be taken unless equivalent courses have already been taken at the undergraduate level.

12 credits of applied music in organ (four semesters of 3 credits each) will be scheduled as private lessons. Students are required to take jury examinations in each semester of enrollment in organ until the recital is successfully completed. A one-year residency is required.

Students must present two complete recitals. One must be a lecture-recital, with a 30-minute lecture and 30 minutes of solo repertoire. The other must include 60 minutes of solo repertoire. Recital programs must be approved by the private instructor and/or the program advisor.

In addition to the general exit examinations in music history and theory, students must pass a proficiency exam in sight reading.

Performance—Piano

Requires a minimum of 30 credit hours			<i>Credits</i>
MUP	603	Applied Music (piano performance)	12
MUP	690	Recital	0
MUS	506	Chamber Music and/or Accompanying	2
MUS	524	Piano Literature I*	2
MUS	525	Piano Literature II*	2
Graduate music core courses			9
Electives—Any MUS, MUP, or MUE 500- or 600-level courses			3

*Piano Literature I and II must be taken unless equivalent courses have already been taken at the undergraduate level.

12 credits of applied music in piano (four semesters of 3 credits each) will be scheduled as private lessons and will be supplemented with studio class participation. Students are required to take jury examinations in each semester of enrollment in piano until the recital is successfully completed. A one-year residency is required.

Students must present one full-length solo recital from memory. The program, which must be approved by the program advisor, must include a minimum of 60 minutes of solo repertoire.

In addition to the general exit examinations in music history and theory, students must pass a proficiency exam in sight reading.

Performance—Strings

Requires a minimum of 30 credit hours			<i>Credits</i>
MUP	500	Orchestra	1
MUP	603	Applied Music (strings performance)	12
MUP	690	Recital	0
MUS	521	Literature of the Major Instrument	2
Graduate music core courses			9
Electives—Any MUS, MUP or MUE 500- or 600-level courses			6

Performance majors in the area of strings must present two full-length recitals for completion of their degree program. Each recital must include at least 60 minutes of music, one portion of which may include a collaborative ensemble, and must show a range and variety of historical styles (at least one piece must be from the 20th century). At least one major work on the program must be memorized. This is a graded recital in which a grade of B or better must be earned for credit.

Guitarists and harpists may, in consultation with their program advisor and studio teacher, fulfill the one-credit ensemble requirement by enrolling in other appropriate ensembles.

Performance—Voice

Requires a minimum of 32 credit hours			
MUP	603	Applied Music (voice performance)	12
MUP	690	Recital	0
MUS	522	Music Literature: Voice I	2
MUS	523	Music Literature: Voice II	2
MUS	535	Advanced Aural Skills	3
MUS	501	Chorale	1
or			
MUS	505	Chamber Singers	1
Graduate music core courses			9
Electives—Any MUS, MUP, or MUE 500- or 600-level courses			3

Students are required to take jury examinations in each semester of enrollment in voice until the recital is successfully completed. A one-year residency is required.

During the final semester of graduate study, the student will be required to present one complete recital from memory (minimum requirements: 60 minutes of music with no more than 12 minutes of ensemble performance) demonstrating evidence of interpretive skill and vocal technique in English, French, German and Italian repertory.

In addition to the general exit examinations in history and theory, students must pass Italian, French or German diction at the graduate level; pass a written comprehensive exam in vocal literature; an examination in sight singing ability; be able to sight read a simple choral accompaniment to a song; and accompany a singer with songs from a prepared list.

Minimum proficiencies

- Completion of 2 semesters of undergraduate Italian and 2 semesters of undergraduate French or German
- Diction pronunciation proficiency exam in French, Italian and German
- Ability to play at the piano: I, IV, V, I chord progression in keys up to 3 sharps and flats
- Ability to sight read a hymn or similar choral song accompaniment

Performance—Woodwinds

Requires a minimum of 30 credit hours

MUP 603	Applied Music (woodwinds performance)	12 cr.
MUP 690	Recital (2)	0 cr.
MUS 521	Literature of the Major Instrument	2 cr.
MUS 500/501/ 508	Orchestra/Chorale/Wind Ensemble	1 cr.
Graduate music core courses		9 cr.
Electives—Any MUS, MUP, or MUE 500- or 600-level courses		6 cr.

Performance majors in the area of woodwinds must present two full-length recitals for completion of their degree program. The recitals will include at least 60 minutes of solo repertoire. Chamber music may be included and must be approved by the graduate advisor (and/or the private instructor). The candidate must be a featured soloist in the repertoire.

In addition to the general final examinations in history and theory, candidates must pass an exam on woodwind literature and performance practice.

Certificate of Graduate Study

Composing Together is a 9-credit certificate of graduate study in teaching music composition. The certificate requires the completion of three courses and may stand alone or may constitute a sub-concentration with the M.M. in music education. The courses within the certificate program, *Composing Together: Level I* (MUE 621), *II* (MUE 622), and *III* (MUE 623), will develop the teacher as a composer and as a facilitator of children's composition in K-12 music classrooms, private and group lessons, computer laboratories, and rehearsal settings. Teachers will learn to design, implement, and assess composition units that they will be able to teach within their own school systems. *See course descriptions below.*

Admission

This certificate program is open to any student possessing an undergraduate degree in music. Applicants are required to submit an application and supporting documents. Please contact the USM Office of Graduate Admissions for an application and instructions.

MUE 595 Topics in Music Education

Course content will vary to represent the strengths of nationally recognized visiting guest faculty. Cr 3.

MUE 611 Introduction to Research in Music Education

Systematic research methods in music applied to individualized descriptive and experimental music research topics and critical evaluation of music research. Study of measurement theory, standardized tests, test construction and interpretation for music aptitude, achievement, performance, aesthetic response, preference, and appreciation. Cr 3.

MUE 612 Philosophical Bases of Music Education

Investigation of historical and current views on the art of music, the role of music in society, and the role of music in human experience. Cr 3.

MUE 613 Psychology of Music Teaching and Learning

Detailed study of topics concerning differential music behavior and perception. This course includes the mechanics of hearing, music memory, learning, and response, as well as an overview of researched teaching practices. Cr 3.

MUE 614 Curriculum Development and Assessment

Detailed study of catalysts for curricular change throughout all aspects of music education: reform, content and objectives, evaluation, human rights, multiculturalism, technology and development of a systematic approach to curriculum design and implementation. Cr 3.

MUE 615 The Professional Portfolio

Oral examination in music education. The oral examination will be scheduled after the completion of all coursework for the MUE master's degree. The student will present the milestones and domain project portions of his/her professional portfolio to a master's examination committee. See details on page 66. Cr 2.

MUE 621 Composing Together: Level I

This course assumes no prior experience in composing music and is designed for teachers who would like to learn the basics of music composition and composition instruction. Participants will learn how to design and implement beginner-level composition activities for students of all ages participating in music in general classroom, computer laboratory, lessons, and rehearsal settings. Cr 3.

MUE 622 Composing Together: Level II

For those who have taken Level I (or want to repeat Level II and desire reinforcement in the principles of teaching the intermediate-level composer). Participants will learn how to design and implement composition activities for students who already have some compositional skills and who are participating in music in general classroom, laboratory,

and rehearsal settings. The Level II course assumes prior experience in teaching music composition to students at the beginner level. This course will prepare teachers to introduce compositional techniques appropriate for students at the intermediate level. Participants will learn how to guide intermediate composers in the study of master composers through active analytical listening. Cr 3.

MUE 623 Composing Together: Level III

For those who have taken Level I and II (or want to repeat Level III and desire reinforcement in the principles of teaching the advanced-level composer). Participants will learn how to design and implement composition activities for students with advanced compositional skills who are participating in music in general classroom, laboratory, and rehearsal settings. The Level III course assumes prior experience in teaching music composition to beginner- and intermediate-level student composers. This course will prepare teachers to introduce compositional techniques appropriate for students at the advanced pre-college level. Participants will learn how to guide advanced composers in the creation of larger scale works. Cr 3.

MUS 510 Bibliography and Research in Music

A study of music reference and research tools, use of library resources and networks, and bibliographic style and technique. Cr 3.

MUS 516 Organ Improvisation I

This course will cover the basics of improvisation at the organ. The goal is to equip students with the skills needed in church situations. Hymns, chorales, and plainsong melodies will form the basis for learning to improvise preludes, postludes, and interludes in a variety of styles. This course will be scheduled as additional applied music time with an organ specialist. Cr 1.

MUS 517 Organ Improvisation II

This course is the continuation of MUS 516. It will be scheduled as additional applied music time with an organ specialist. Prerequisite: MUS 516. Cr 1.

MUS 518 Music Literature: Organ I

A survey of organ literature up to 1800. For organ majors only, others with permission of the School. Cr 2.

MUS 519 Music Literature: Organ II

A survey of organ literature from 1800 to present. For organ majors only, others with permission of the School. Prerequisite: MUS 518. Cr 2.

MUS 520 Seminar in Music History

In-depth study of one or more topics in music history. A substantial final project will be the culmination of both individual research and a synthesis and application of historical studies and approaches. Cr 3.

MUS 521 Literature of the Major Instrument

Advanced study of the literature for solo instrument. Chamber music will be considered when the performer is a featured soloist. Cr 2.

MUS 522 Music Literature: Voice I

Advanced indepth study of vocal literature to be determined by the teacher in the areas of German, French, Italian, Russian, or Spanish repertory. For voice majors only or with permission of the instructor. Cr 2.

MUS 523 Music Literature: Voice II

Advanced indepth study of vocal literature to be determined by the teacher in a contrasting area of study from Music Literature I. For voice majors only or with permission of the instructor. Cr 2.

MUS 524 Music Literature: Piano I

A survey of keyboard literature up to 1830. For piano majors only, others with permission of the School. Cr 2.

MUS 525 Music Literature: Piano II

A survey of keyboard literature from 1830 to the present. For piano majors only, others with permission of the School. Cr 2.

MUS 526 Composition (20th Century Survey)

This survey will cover the major trends, movements, styles, and philosophies that influenced the creation of contemporary concert music in the last century with an overview of current fashion. Cr 3.

MUS 530 Seminar in Music Theory

Advanced study of one or more topics in music theory, including both a reading and an analytical component, and the pedagogy of music. A substantial final project is required. Cr 3.

MUS 532 Counterpoint

Analysis and writing of tonal counterpoint. Emphasis is given to the study of canon, invention, fugue, chorale prelude, and continuous variations, using 18th-century works as models for composition. Cr 3.

MUS 533 Advanced Analysis of Tonal Music

Advanced study of analytical approaches to tonal music: parametric analysis, the analysis of phrase rhythm and hypermeter, and Schenkerian analysis. Cr 3.

MUS 535 Advanced Aural Skills

Advanced development of aural skills and the pedagogy of aural skills through the use of contextual listening examples, performance drills, and other ear training and sight singing techniques. Cr 3.

MUS 537 Jazz Composition/Arranging

Detailed study and analysis of music for small and large jazz ensembles including composing and arranging for a variety of instrumental combinations. Cr 3.

MUS 544 Instrumental Conducting

Stylistic study of scores from a variety of periods, advanced baton and left hand techniques, rehearsal

techniques, and conducting experience with instrumental ensembles. Cr 3.

MUS 545 Choral Conducting

Advanced development of non-verbal gestures through the art of choral conducting. The course includes musical analysis of choral scores, rehearsal techniques, and performance preparation. A research paper is required. Cr 3.

MUS 560 Advanced Keyboard Skills I

This course provides practical instruction in the advanced keyboard skills of score reading, transposition, harmonization of melodies, and realization of continuo. These performance skills will be taught with emphasis on the preparation of examples outside the class as well as the active participation by students in class. Cr 2.

MUS 561 Advanced Keyboard Skills II

The second semester continuation of Advanced Keyboard Skills I. Prerequisite: MUS 560. Cr 2.

MUS 562 Topics in Brass Studies

Critically and analytically pursue a topic of brass instrument study or performance either independently or in a group. Cr 3.

MUS 563 Topics in Keyboard Studies

Critically and analytically pursue a topic of keyboard study or performance either independently or in a group. Cr 3.

MUS 564 Topics in String Studies

Critically and analytically pursue a topic of string study or performance either independently or in a group. Cr 3.

MUS 565 Topics in Vocal Studies

Critically and analytically pursue a topic of vocal study or performance either independently or in a group. Cr 3.

MUS 566 Topics in Woodwind Studies

Critically and analytically pursue a topic of woodwind study or performance either independently or in a group. Cr 3.

MUS 567 Topics in Percussion Studies

Critically and analytically pursue a topic of percussion study or performance either independently or in a group. Cr 3.

MUS 570 Topics in Contemporary Music Technology

Intensive study of one or more areas of music technology in the context of producing music compositions, creating pedagogical multimedia applications, performing music with interactive applications, or recording and editing digital audio/video. A substantial final project is required. Cr 3.

MUS 572 Vocal Pedagogy

A study of the teaching methods and materials for

voice. Normally the voice sessions will be offered in alternate years. For performance majors. Other music majors only with permission of the School. Cr 2.

MUS 574 Jazz Pedagogy/Program

Administration

Pedagogical approaches to the analysis of jazz ensemble scores, rehearsal techniques, concert planning, public relations, recruiting, promotion, grant writing and other aspects of the development of a Jazz Studies program. Cr 2.

MUS 575 Pedagogy of the Major Instrument

A study of the teaching methods and materials for instruments, excluding piano. This class will be scheduled as additional applied music time with an instrumental specialist. For performance majors only. Other music majors with permission of the School. Cr 2.

MUS 576 Class Piano Teaching I

This course provides an overview of teaching group piano to adult beginners. Students spend the semester observing the teaching of MUS 150 Piano Class I and meet with the teacher weekly for discussion and additional instruction. Piano majors or permission of the School. Cr 2.

MUS 577 Class Piano Teaching II

This course is the second semester continuation of MUS 576 Class Piano Teaching I. Students observe the teaching of MUS 151 Piano Class II and meet with the teacher weekly for discussion and additional instruction. Students have the opportunity to teach the class under the instructor's supervision. Piano majors or permission of the School. Cr 2.

MUS 578 Pedagogy of the Major Instrument: Piano I

A study of the teaching methods and materials for piano. This class will be scheduled as additional applied music time with an instrumental specialist. For performance majors only. Other music majors with permission of the School. Cr 2.

Ensembles

MUS 500 Orchestra

A full symphonic ensemble open to all University students and community members through audition. The ensemble focuses on the skills required for ensemble performance through a variety of literature. The orchestra performs at least one major concert per semester. Cr 0.5.

MUS 501 Choral

A large choral ensemble of mixed voices open to all University students by audition. Cr 0.5.

MUS 502 Concert Band

A wind and percussion ensemble open to all University students through audition. The ensemble focuses on the fundamentals of ensemble performance dealing with a variety of literature. Prerequisite: audition. Cr 0.5.

MUS 579 Pedagogy of the Major Instrument: Piano II

This course is the second semester continuation of MUS 578. Students will observe weekly lessons, research and prepare repertoire and lesson plans, and evaluate their peers' teaching. Each student teaches at least one group lesson. This class will be scheduled as additional applied music time with an instructor. For performance majors only. Other music majors with permission of the School. Cr 2.

MUS 596 Topics in Jazz

Critically and analytically pursue a topic of interest independently or in a group. Cr 3.

MUS 598 Independent Study

A project requiring directed research and readings, culminating in a final document. Consent of the instructor required. Cr 3.

MUS 675 Jazz Chamber Music Coaching

Pedagogical approaches to coaching a chamber jazz ensemble. The ensemble will be under the direct coaching responsibility of the student. Cr 3.

MUS 682 Chamber Jazz Ensemble Evolution and Analysis

Advanced analysis and examination of the historical evolution of the chamber jazz ensemble, including detailed listening and critical discussion. Cr 2.

MUS 683 Large Jazz Ensemble Evolution and Analysis

Advanced analysis and examination of the historical evolution of the large jazz ensemble, including detailed listening and critical discussion. Cr 2.

MUS 694 Internship

A field application of theory and practice. The project will be jointly defined by student, professor, and employer. Graded CR/NC. Cr 3.

MUS 695 Thesis

Credit given on acceptance of thesis. Cr 0-3.

MUS 503 Percussion Ensemble

A percussion ensemble open to all University students through audition. Prerequisite: audition. Cr 0.5.

MUS 504 Opera Workshop

This ensemble will focus on the union of musical ideas with dramatic situations and will explore the ways in which singers must convey the essence of a dramatic situation. Performances of scenes from operas, operettas, and musical theater. Prerequisite: audition. Cr 0.5.

MUS 505 Chamber Singers

A small choral ensemble of mixed voices, selected by audition, specializing in a cappella singing. Cr 0.5.

MUS 506 Chamber Music

A performance course open to all qualified students

interested in forming chamber groups under faculty supervision. Cr 0.5.

MUS 507 Jazz Ensemble

An instrumental ensemble specializing in the study and performance of jazz for large and small groups from early jazz to the present. Open to all students by audition. Prerequisite: audition. Cr 0.5.

MUS 508 Wind Ensemble

The Wind Ensemble, based upon the solo performer premise, has established a tradition of performing chamber and large instrumentations, traditional or experimental combinations, and early through contemporary literature. Prerequisite: audition. Cr 0.5.

MUS 509 Harp Ensemble

A harp ensemble open to all University students by

audition. The ensemble focuses on the fundamentals of ensemble performance and plays literature of contrasting musical periods and styles. Prerequisite: audition. Cr 0.5.

MUS 511 Collegium

An early music ensemble dedicated to the performance of music from the Medieval through the Baroque period. This ensemble is open to singers and instrumentalists from the University and the general community. Prerequisite: audition. Cr 0.5.

MUS 552 Accompanying

A workshop course in applied accompanying, either under faculty supervision or by applied faculty approval. A half credit is awarded for each 20 hours of University-approved accompanying with a maximum of two credits per semester. Cr 0.5-2.

Applied Music

MUP 603 Applied Music, Major Area

Private instruction in the major area of study. May be repeated for credit. Fee assessed. Cr 3.

MUP 604 Applied Music, Secondary Area

Private instruction in a secondary area of study. May be repeated for credit. Fee assessed. Cr 2-3.

MUP 690 Recital

Public performance in the area of applied study. May be repeated. Cr 0.

Master of Social Work

Director: Vincent Faherty; *M.S.W. Coordinator:* Jeanette Andonian; *Field Work Coordinator:* Leslie Richfield; *Field Work Associate:* Pamela Murton
Professors: Faherty, Healy, Wagner; *Associate Professors:* Andonian, Fineran, Johnson, Kohli, Lazar, Moyo, Rich; *Lecturer:* Belicose

Mission Statement

The University of Southern Maine's School of Social Work is committed to educating culturally competent generalist social work practitioners prepared for multi-level, strengths-based practice that values the centrality of community in enhancing the well-being of diverse individuals, families, groups, organizations, and communities.

Program Description and Requirements

The M.S.W. program is accredited by the Council on Social Work Education (CSWE). The School of Social Work graduate program description and requirements contained in this online catalog are supplemented by two additional documents (i.e., the M.S.W. Handbook and the M.S.W. Field Work Manual) that can also be accessed online at www.usm.maine.edu/swo/manuals.htm and www.usm.maine.edu/swo/handbooks.htm. The Field Work Manual is also available for purchase at the campus bookstore. It is important to recognize that students will be held to the policies and standards in this catalog, the M.S.W. Handbook, and the Field Work Manual.

The first-year curriculum provides a broad-based introduction to the social work profession. Students take 31 credits of study. During the first semester, students complete the course, SWO 501 Multicultural Social Work, which provides a framework for integrating and centering the issue of diversity within the profession of social work. Courses taken during the foundation year are:

SWO	501	Multicultural Social Work
SWO	502	Critical Thinking about Human Behavior I
SWO	503	Generalist Social Work Practice I
SWO	504	Social Welfare Policy I
SWO	505	Social Work Research I
SWO	552	Critical Thinking about Human Behavior II
SWO	553	Generalist Social Work Practice II
SWO	554	Field Work and Field Seminar I
SWO	555	Field Work and Field Seminar II
		One Elective Course

During the second-year (i.e. concentration year), students deepen their competency for multi-level professional practice within the advanced generalist community social work curriculum. Increased emphasis is placed on the development of creativity, critical thinking, valuing diversity, social and economic justice, and leadership. Students are prepared to work with individuals and families as well as organizations and communities. During the concentration year, students complete 33 additional credits including two additional semesters of field work and three electives. In consultation with their advisor, students can select graduate electives in the School of Social Work and/or other University programs. No more than six graduate credits can be taken outside the School and elective courses should support the concentration in advanced generalist community practice and the individual student's career goals. Concentration year courses are:

SWO	603	Social Work Practice III: Organizations and Communities
SWO	604	Social Welfare Policy II
SWO	605	Social Work Research II: Social Data Analysis
SWO	651	Social Work Practice IV: Individuals and Families
SWO	652	Social Work Research III: The Research Project (or SWO 695 Thesis Option)
SWO	654	Field Work and Field Seminar III
SWO	655	Field Work and Field Seminar IV
		Two Elective Courses

Time Requirements

The graduation requirement for the M.S.W. degree is 61 credits, which can be taken in a two-year sequence or a four-year sequence. Students will be admitted as a cohort group either to the two-year or four-year sequence. In rare extenuating circumstances, an extension of the time requirement for completing the M.S.W. program may be granted (see the M.S.W. Student Handbook). The foundation year(s) field placement includes 500 hours and the concentration year(s) placement 600 hours.

The advanced standing program is 33 credits which is the concentration year of the M.S.W. program. Advanced standing students will be admitted either to the one-year or the two-year sequence. The field placement requirement for the advanced standing program is 600 hours.

Once enrolled in the program, a change in sequence requires approval of the M.S.W. coordinator. It should be noted that the two-year sequence and the one-year sequence in the advanced standing program are highly demanding and work other than part-time is discouraged.

Field Work

Field education is the heart of the M.S.W. program. Professional social work education provides the necessary opportunity for students to apply and integrate classroom learning with social work practice in the community. A range of challenging field work placements exists in innovative and well-established social service agencies throughout Maine. Any decision about the suitability of a proposed placement rests with the School of Social Work.

The field work component of the M.S.W. policies and procedures are detailed in the Field Work Manual that is available through the School of Social Work Web site or may be purchased at the campus bookstore. All M.S.W. students are responsible for following the policies outlined in the manual.

Application and Admission

All application materials must be sent directly to the Office of Graduate Admissions.

The graduate program in social work seeks candidates whose baccalaureate preparation, scholastic achievement, professional experience, interest, motivation, and references are predictive of successful completion of the M.S.W. program. Only candidates who have earned a bachelor's degree are admitted to the M.S.W. program. In addition to the materials described in the Admissions section of this catalog, the M.S.W. Admissions Committee's review of applications for admission will be based on a composite of the following standards:

1. Completion of a bachelor's degree with a GPA of 3.0 or above in undergraduate study and a student's major;
2. GPA of 3.0 or above in any previous graduate work in social work;
3. Personal statement of 4-6 pages following the outline provided by the School of Social Work and available through the Graduate Admissions Office Web site at www.usm.maine.edu/grad;
4. Three recent letters of reference reflecting on both academic achievement and paid or volunteer work experience relating to social services;
5. For advanced standing students, applicants must submit their previous final field evaluation received from a B.S.W. program accredited by the Council on Social Work Education. For students currently enrolled in accredited B.S.W. programs, mid-year evaluations must be submitted with the applications. Acceptance into the M.S.W. program will be conditional upon the receipt of the final field work evaluation.

In addition, the M.S.W. Admissions Committee will review each applicant's undergraduate coursework to determine whether any one or more of the areas specified below are under-represented:

1. At least 18 credit hours in liberal arts such as literature, math, history, philosophy, performing arts, and humanities,
2. At least 6 of the 24 credits must be in the social sciences, and
3. A statistics course.

Applicants who lack the above liberal arts courses can be accepted into the program conditionally. The expectations for meeting the conditions will be explained in the acceptance letter.

Advanced Standing

Applicants with a B.S.W. degree from a social work program accredited by the Council on Social Work Education may apply for advanced standing within 6 years of completing a B.S.W. degree. For example, a student graduating with a B.S.W. in May 2007 must be accepted into and begin the M.S.W. advanced standing program at USM no later than September 2014. Once in the program, advanced standing students are expected to follow the grade policy as delineated in the Grade Policy: Course Grades and GPA section below.

Admission Appeals

Applicants may appeal an admission decision by submitting a written appeal to the M.S.W. coordinator within 10 business days.

Graduate Assistantships and Scholarships

A limited number of graduate assistantships are available to M.S.W. students. Graduate assistants must carry a minimum of 6 credits of course work per semester. Duties may involve research and other projects for assisting faculty. Information on various types of scholarships and financial aid is available online at the School of Social Work Web site at www.usm.maine.edu/swo.

Transfer Students

Matriculated students who have earned graduate credits in a Council on Social Work Education accredited M.S.W. program may transfer up to 30 credits. To transfer credits, students must enroll in the graduate program at USM within 7 years of initially earning credits from another M.S.W. program. In order to transfer credits, the student must have received a grade of B or above.

Application Review Cycle

The School of Social Work instituted rolling admissions for the M.S.W. program effective during the 2009-10 admissions cycle. The following policy is constructed to guide this process.

Individuals may apply to the M.S.W. program at any time, and completed application files will be reviewed as they are received beginning on October 15. All applicants are strongly urged to apply as early as possible. Later applicants, if accepted, are more likely to be placed on a wait list.

Full Time Program Applicants

The Admissions Committee will continuously review applications for the full-time M.S.W. program, including advanced standing, from the beginning of the review cycle until February 20. Accepted students will need to begin the field placement process as early as possible in order to secure internships for the fall semester. If accepted, they must contact the M.S.W. field coordinator promptly to begin the field placement process in order to have access to the widest selection of field sites. Delaying this process may limit field placement options.

Part-time Program Applicants

Applications for the part-time program, including advanced standing, will be reviewed from the beginning of the review cycle until April 15. Applications completed after April 15 may be reviewed and considered should there be openings available, but this is not guaranteed. Applicants whose files are completed after April 15 should expect that review will most likely occur during the next application cycle.

Admissions Committee Decision and Applicant Response Timeline

Individuals with completed applications received between October 15 and April 15 can expect that their materials will be reviewed within four weeks from the date they are received by the Admissions Committee. Once applicants are notified of acceptance, they will have two weeks from the date on the acceptance letter to respond to the Graduate Admissions Office about attending. To secure a seat in the program, a \$200 deposit must be submitted with the notification form and sent to the Graduate Admissions Office. It is the responsibility of the applicant to respond within this time period and submit a deposit in order to reserve a seat in the program.

Program Policies

The following academic policies supplement and clarify academic policies detailed in the beginning of this catalog.

Advisement

Each student will be assigned a faculty advisor upon admission to the program. Students should maintain regular contact with their faculty advisors throughout their course of study. Additionally, students are required to meet with their advisors each semester before registering courses for a new semester. The advisement session includes discussion of career goals, progress in the program, elective course selection, and change of student status.

Grade Policy: Course Grades and GPA

All students must achieve a minimum of a B- grade for all prerequisites and all graduate courses. If students earn a grade lower than a B-, they may retake the course one more time to earn a passing grade. Students who earn a grade lower than a B- in more than one course may not progress in their studies without permission of the director of the School of Social Work. Students are required to earn a grade of B or above in social work practice and field work courses. If satisfactory completion of social work practice and field work courses is not achieved, an academic review process will be initiated according to the M.S.W. Student Handbook. Advanced standing students who receive a B- or lower grade in a social work practice course will be withdrawn from field placement and advanced standing status. The student may be permitted to continue in the program as a regular two-year student. A grade of F in a field work course will result in withdrawal from the University (see USM Withdrawal Policy).

If the cumulative GPA falls below a 3.0 (i.e. B average) in any semester, the student will be placed on probation. The student on probation will have the following semester to raise the GPA. A student on academic probation may not begin a field placement. If, after one semester the student's GPA has not improved to a 3.0, the student will be withdrawn from the program. A minimum GPA of 3.0 is required for graduation. Students may count only 3 credits of C in an elective course toward graduation. A cumulative GPA below 2.0 will result in withdrawal from the University (see USM withdrawal policy). Additionally, any advanced standing student whose GPA drops below 3.0 will not be able to register for field work until they raise their GPA to 3.0 or above. Students who receive a grade lower than B- or whose GPA drops below a 3.0 must contact their advisor or the School's director (if advisor is unavailable) within one week of receiving their grades.

Grade Policy: Incompletes

An incomplete grade must be changed to a full grade prior to progression to the next sequential course, unless an arrangement involving the student and the faculty has been agreed upon in writing. Students who do not complete the required work by the designated time will be ineligible for field practicum placement in September.

Academic Grade Appeal Policy

Refer to USM Grade Appeal Policy.

Leave of Absence and Deferment

Graduate students in the School of Social Work must be continuously enrolled in the M.S.W. program, with at least 6 credits every semester. Students who have completed all coursework and have opted to complete a thesis are required to register for GRS 601, a non-credit course that carries a fee and entitles the student to continued access to USM computers, library, and recreational facilities. In extenuating circumstances, a student may petition for a waiver of the continuous enrollment policy; the petition must obtain the approval of the student's advisor and M.S.W. coordinator. A waiver notification will then be sent to the Office of Graduate Admissions. Students who have been accepted into the program may apply to the M.S.W. coordinator to defer the admission for *one year only*. A deferment notification will be sent to the Office of Graduate Admissions. In order to maintain student status, all students must be enrolled in at least 6 credits toward the degree program, be enrolled in GRS 601, or on a formal approved leave of absence in each semester.

Non-Matriculated Status

Students may take up to 9 credits at USM on a non-matriculated basis. Non-matriculated students must register for SWO 501 as their first course. Other cours-

es non-matriculated students can select from are SWO 502, SWO 504, SWO 505, SWO 552, or an elective course with permission of the instructor.

It is especially important to note that non-matriculated students who are accepted into the M.S.W. program at a later date can receive credits for a total of 9 credits from USM and/or graduate schools including the School of Social Work. The School of Social Work also reserves the right to approve all courses taken outside of the USM School of Social Work to be counted toward the M.S.W. degree.

Program Scheduling

While the School of Social Work will make every effort to maintain consistency in its course offerings, it is important to note that the scheduling of courses are subject to change at any time without advance notice.

SWO 501 Multicultural Social Work

This introductory course provides content on culturally diverse populations and serves as the basis for the infusion of cultural diversity issues throughout the graduate curriculum. The premise of this course asserts that the United States is a multicultural society in which social work cannot function effectively unless there is an understanding of how diversity strengthens and enriches us all. Open to non-matriculated graduate students. Cr 3.

SWO 502 Critical Thinking about Human Behavior I

This course examines the theories which address human behavior in mezzo and macro systems. The cultural context of behavior at all levels is an integral and underlying theme of the course. Systems theories, conflict theories, and social constructionist theories are presented. Open to non-matriculated graduate students. Cr 3.

SWO 503 Generalist Social Work Practice I

This course provides the student with an opportunity to acquire beginning generalist practice knowledge and skills in working with individuals, families, groups, and communities. Emphasis is placed on the development of basic practice, interpersonal, self-reflection, and communication skills. Corequisite or prerequisite: SWO 501. Cr 3.

SWO 504 Social Welfare Policy I

This introductory policy course provides an overview of the history of social welfare as well as an introduction to current social policy issues and dilemmas. Emphasis is placed on historical continuities in analyzing the American system of social welfare provision and lack of provision. Corequisite or prerequisite: SWO 501. Open to non-matriculated graduate students. Cr 3.

SWO 505 Social Work Research I

This course introduces a body of knowledge, skills, and attitudinal perspectives designed to produce a high level of competence in the use of social scientific methods of knowledge building. Structured, analytical processes of inquiry are introduced, as well as a rigorous adherence to social work values and ethics. Both qualitative and quantitative methods of inquiry are discussed. Prerequisite: SWO 501. Open to non-matriculated graduate students. Cr 3.

SWO 552 Critical Thinking about Human Behavior II

The course is designed to locate the interplay of biological, psychological, and sociological influences on human behavior within the broader context of culture. Cultural diversity and oppression are seen as central to understanding human behavior and evaluating human behavior theories. The course explores a range of psychological theories such as psychodynamic, narrative, cognitive, and behavioral to understand the person within the complexity of his/her life circumstances. Prerequisites: SWO 501, SWO 502. Open to non-matriculated graduate students. Cr 3.

SWO 553 Generalist Social Work Practice II

The knowledge, values, and skills for community social work are integrated throughout this course. Ecosystems and social construction theories provide the overarching framework. Within this context, methods for intervening with individuals, families, groups, organizations, and communities are introduced. Prerequisite: SWO 503. Cr 3.

SWO 554 Field Work and Field Seminar I

A graduate internship in an approved community agency, designed to relate social work theory to practice under professional supervision. Fall semester. Corequisite or prerequisite: SWO 503. Cr 3.5.

SWO 555 Field Work and Field Seminar II

A continuation of SWO 554. Spring semester. Corequisite or prerequisite: SWO 553. Cr 3.5.

SWO 561 Sexual Diversity and Gender Identity in Social Work Practice

This course examines the sensitivity and skills needed to achieve constructive interaction between the social work professional and persons who are lesbian, gay, bisexual, transgender, or questioning their sexual identity. This course will explore the many controversial theoretical and practice issues related to sexual orientation, gender identity, and human sexuality. This course is an elective in both the undergraduate and graduate social work programs. Cr 3.

SWO 563 Social Work with Groups

This course incorporates knowledge building regarding the conceptual base and practice skills of social group work. There is a focus on the uses of groups to bring about change in the individuals, change in the social environment, or change in the larger social system. The range of group models from treatment/growth oriented to task/action oriented groups are addressed. Prerequisite: SWO 553. Cr 3.

SWO 575 Gender and Aging

A theoretical and practical course that informs students about aging issues affecting women and men differentially. Students will analyze the manifestations of aging and apply concepts drawn from the behavioral and social sciences. Service learning experience may be available. This course is an elective in both the undergraduate and graduate social work programs. Cr 3.

SWO 585 Sexual Abuse of Children and Adolescents

This course introduces the specialized knowledge and skills needed for social work practice relative to child sexual abuse, with a strong focus on understanding the dynamics when sexual abuse occurs in trusted relationships within families, organizations, and institutions. The course provides students the opportunity to integrate current research and theories around etiology, impact, and treatment within issues of resiliency, family strength, social support systems, diversity, value dilemmas, and social justice. This

course stresses the need to base a practice approach on the holistic strengths-risks-based assessment of the child and the family and highlights the collaborative roles various providers play at all levels of the response systems including investigation, validation, intervention, and prevention. Cr 3

SWO 591 Mind/Body/Spirit Connections in Social Work Practice

Examines mind/body/spirit connections in social work practice with regard to stress and its management (meditation, breath-control, other relaxation techniques), stress-related illnesses and personalities; complementary therapies (mainstream and culturally specific); and spirituality. This course is an elective in both the undergraduate and graduate social work programs. Cr 3.

SWO 596/696 Topics in Diversity

A variety of elective courses under this title are offered to facilitate students' development of competency in working with different population groups such as those oppressed by race and ethnicity, language, nationality, social class, gender, sexual orientation, mental and physical ability, spiritual and religious affiliation, and other factors. Prerequisite: SWO 501 or equivalent as determined by the instructor. Additional prerequisite may be required for some elective courses. Cr 3.

SWO 597 Independent Study

This is an individualized course of study, during the foundation year, on some aspect of social work or social welfare to be selected as a result of consultation between a student and a faculty member. Cr 1-3.

SWO 598/698 Topics in Community Social Work Practice

A variety of elective courses under this title are offered to cover a wide spectrum of micro and macro practice issues. These courses facilitate students' exploration of new practice areas or enhancement of advanced practice skills. Prerequisite: SWO 503 or equivalent as determined by the instructor. Additional prerequisite may be required for some elective courses. Cr 3.

SWO 603 Social Work Practice III: Organizations and Communities

This course builds on the concepts presented in Practice I and II. This course further develops students' generalist values, knowledge, and skills for planned change with a particular focus on work with populations of special concern to social work. The course content emphasizes practice within communities and organizations. Prerequisites: SWO 553, SWO 555. Cr 3.

SWO 604 Social Welfare Policy II

This course provides a theoretical and critical model of analyzing policy processes. It contains an overview of policy analysis with particular emphasis on social conflict theory and social construction-

ist theories of policy formation. Prerequisites: SWO 504, SWO 554, SWO 555. Cr 3.

SWO 605 Social Work Research II: Social Data Analysis

This course provides an interactive learning environment in which students learn to analyze quantitative and qualitative existing social data. The goal of this course is to increase the analytical competencies of students in the planning, and eventual execution, of a community-based research project. Prerequisite: SWO 505. Cr 3.

SWO 651 Social Work Practice IV: Individuals and Families

This course contextualizes the facilitation of change with individuals and families within organizations and communities. Approaches to social work practice are taught within an ecosystems, strengths-based framework that reflects a commitment to the values of social and economic justice, cultural diversity, and individual and collective self-determination. Corequisite or prerequisite: SWO 603. Prerequisite: SWO 555. Cr 3.

SWO 652 Social Work Research III: The Research Project

This course involves the utilization of the research knowledge and skills learned in SWO 505 Social Work Research I and SWO 605 Social Work Research II, and their application to selected social problems or issues of relevance to the needs of special populations or to the social work profession. Prerequisite: SWO 605. Cr 3.

SWO 654 Field Work and Field Seminar III

A graduate internship during the concentration year at an approved community agency, designed to relate social work theory to practice under professional supervision. Fall semester. Corequisite or prerequisite: SWO 603. Cr 4.5.

SWO 655 Field Work and Field Seminar IV

A continuation of SWO 654. Spring semester. Corequisite or prerequisite: SWO 651. Prerequisite: SWO 654. Cr 4.5.

SWO 660 Advanced Biopsychosocial Assessment

This course is designed to facilitate the acquisition of practice skills specific to in-depth biopsychosocial assessment. Assessment is viewed as the process of understanding a person in order to formulate a practice approach rather than a fixed descriptive category. This course relies heavily upon theories presented in SWO 502 and SWO 552. Consideration of persons within a cultural context is emphasized throughout. Cr 3.

SWO 695 Thesis Option

In lieu of SWO 652, students may apply to the Research Sequence Curriculum Committee for permission to take the Thesis Option. This option pro-

vides structure and assistance to students wishing to complete a formal thesis rather than a research project. Upon completion, the student will present a verbal summary of the thesis at a formal thesis defense meeting. This option may be especially attractive for those students contemplating advanced doctoral-level education in social work or in other social sciences. Cr 6.

SWO 697 Independent Study

This is an individualized course of study, during the concentration year, on some aspect of social work or social welfare to be selected as a result of consultation between a student and a faculty member. Cr 1-3.

Master of Science in Statistics

Director: Muhammad El-Taha

Professors: El-Taha, Guay, Gupta; *Associate Professors:* Peng, Valdés; *Assistant Professors:* Aboueissa, McCormick; *Adjunct Professor:* Thompson

The graduate program in statistics is designed to provide students with a broad knowledge of the concepts and practice of statistics and related fields. Students are prepared to assume positions of responsibility and expertise. Graduates may find employment involving diverse statistics-related activities in business, industry, government, regulatory agencies, insurance companies, biotechnology firms, and marketing research firms. Graduates possess a good foundation to pursue further advanced studies in statistical sciences and allied disciplines.

Program Description

The graduate program is offered in a flexible 4+1 format where currently enrolled undergraduate students in mathematics and other disciplines at USM may earn both an undergraduate degree and the M.S. degree in statistics in five years. Candidates planning to earn both the undergraduate and the graduate degrees in five years are advised to take MAT 281 Probability and MAT 282 Statistical Inference in the sophomore year, take upper-level undergraduate courses in relevant concentrations in the junior year, and take graduate-level courses in the senior year. The student will receive graduate standing (full matriculation) after satisfactory completion of all requirements for the undergraduate degree. Candidates holding baccalaureate degrees from accredited institutions may join the program directly at the master's level.

Admission Requirements

Applications from students with undergraduate degrees in business, computer science, education, mathematics, statistics, engineering, or one of the behavioral or social sciences are encouraged. It is required that the applicant has completed the following USM courses: MAT 153 Calculus B, MAT 281 Probability, and MAT 282 Statistics or their equivalents. Conditional admission status may be granted to students who do not fully meet these requirements, but have a good working knowledge of statistical methods. Upon successful completion of preparatory coursework, the student will be granted regular admission status.

Currently enrolled students at USM may apply for admission anytime after attaining junior standing by applying directly to the Office of Graduate Admissions. Additional requirements include copies of all transcripts, current vitae, a personal statement, a GPA of 2.75 or better, and two letters of recommendation.

A student already holding a baccalaureate degree from an accredited institution may apply directly to the Office of Graduate Admissions. Additional requirements include copies of all transcripts, current vitae, a personal statement, a GPA of 3.0 or better, GRE scores, and three letters of recommendation. Applicants whose first language is not English are required to submit TOEFL scores.

Application Deadlines

The program has a rolling admission policy. However, deadlines for candidates seeking financial support are March 15 for the fall semester and October 15 for the spring semester. Students applying to the graduate program by January 15 are eligible to apply for a tuition waiver for the next academic year.

Degree Requirements

The graduate program has three tracks. The highlight of the program is the new Professional Science Master's Program in Biostatistics. The other two tracks are Applied Statistics and Operations Research/Applied Mathematics.

Program Tracks

The graduate program is truly interdisciplinary, providing the student with the opportunity to tailor programs specifically to individual interests. Students may customize their program of study. A list of possible concentrations and relevant courses is listed below:

1. Track One: Professional Science Master's Program in Biostatistics

The University of Southern Maine is offering a new Professional Science Master's (PSM) program as part of the Master's of Science in Statistics. The PSM is a new

type of two-year graduate program in the sciences and mathematics that equips students for work in public and private business sectors.

This track provides formal training in applied statistical methods that are commonly used in biomedical, bioinformatics, environmental, and health-related fields. The program emphasizes solving real-world problems that influence health by focusing on up-to-date statistical methodologies and their implementation with strong statistical programming capability. The areas of study include biostatistical study designs, modeling, and the reporting of rigorous statistical results for scientific decision making. Statistical areas of study include clinical trials, experimental design, categorical and longitudinal data analysis, and survival analysis. Internship, technical writing, and management skills are required components of the program. Graduates will ideally find positions in professional settings such as health care agencies, governmental agencies, and the pharmaceutical industry, among others.

Requirements for Biostatistics Track

I. Core Courses: 15 credits

AMS	535	Epidemiology (3 cr)
AMS	677	Regression Models in Biostatistics (3 cr)
or		
STA	587	Categorical Data Analysis (3 cr)
STA	574	Statistical Programming (3 cr)
STA	580	Applied Statistical/Biostatistical Methods (3 cr)
STA	583	Sample Survey Design and Analysis (3 cr)

II. Extra Disciplinary Credits: 5 credits

Ethics

STA 501 Ethical Issues in Biostatistics (2 cr)

Management. Select one of the following courses;

MBA 670 Management Science (3 cr)

HPM 636 Health Information Management (3 cr)

OPR 561 Deterministic Models in Operations Research (3 cr)

III. Practical Experience: 3 credits

STA 575 Graduate Internship and Writing (3 cr)

IV. Electives: Choose 9 credits of the following

STA/OPR 562 Stochastic Modeling (3 cr)

STA/OPR 563 Simulation Modeling and Analysis (3 cr)

STA 582 Introduction to Longitudinal Data Analysis (3 cr)

STA 584 Advanced Design and Analysis of Experiments (3 cr)

STA 585 Linear Models and Forecasting (3 cr)

STA 589 Survival Analysis (3 cr)

STA 591 Topics in Biostatistics (3 cr)

2. Track Two: Applied Statistics

Required Courses:

STA 574 Statistical Programming (3 cr)

STA 580 Applied Statistical/Biostatistical Methods (3 cr)

Choose from these additional courses:

STA/OPR 562 Stochastic Modeling (3 cr)

STA/OPR 563 Simulation Modeling and Analysis (3 cr)

STA/OPR 575 Graduate Internship and Writing (var cr)

STA 581 Statistical Quality Control (3 cr)

STA 582 Introduction to Longitudinal Data Analysis (3 cr)

STA 583 Sample Survey Design and Analysis (3 cr)

STA 584 Advanced Design and Analysis of Experiments (3 cr)

STA 585 Linear Models and Forecasting (3 cr)

STA 587 Categorical Data Analysis (3 cr)

STA 589 Survival Analysis (3 cr)

STA 591 Topics in Biostatistics (3 cr)

3. Track Three: Operations Research/Applied Mathematics

Required Courses:

OPR	561	Deterministic Models in Operations Research (3 cr)
OPR/STA	562	Stochastic Modeling (3 cr)
OPR/STA	563	Simulation Modeling and Analysis (3 cr)
STA	580	Applied Statistical/Biostatistical Methods (3 cr)

Choose from these additional courses:

OPR/STA	564	Queueing Networks (3 cr)
OPR/MAT	571	Graph Theory (3 cr)
OPR/STA	575	Graduate Internship and Writing (var cr)
STA	581	Statistical Quality Control (3 cr)
STA	582	Introduction to Longitudinal Data Analysis (3 cr)
STA	583	Sample Survey Design and Analysis (3 cr)
STA	584	Advanced Design and Analysis of Experiments (3 cr)
STA	585	Linear Models and Forecasting (3 cr)
STA	587	Categorical Data Analysis (3 cr)
STA	589	Survival Analysis (3 cr)
STA	591	Topics in Biostatistics (3 cr)

Requirements for Tracks Two and Three

The requirements for the M.S. degree in statistics consist of a minimum of 30 credit hours. At least 18 credit hours must be graduate courses offered by the graduate program, excluding graduate internship credits, independent study credits, or thesis/project credits. A student meeting the above requirements has the flexibility of taking additional courses subject to the following policies: at most six of the required credits may be earned by taking pre-approved relevant upper level undergraduate courses. Moreover, the student may earn up to three credits by way of internship with local industry. The program will provide guidance in locating internship opportunities.

Requirements for All Tracks

In addition to the specific track requirements all degree students will be subject to the following requirements.

1. For students within the 4+1 format, at most two pre-approved relevant graduate courses may be used for both the undergraduate and graduate degrees. At least 18 credit hours should be taken by students after full matriculation.
2. All courses applied toward the graduate degree must be completed within six years of enrollment in the graduate program with a cumulative GPA of 3.0 or better. Otherwise, additional coursework must be taken to fulfill program requirements.
3. Our program policies allow a student to earn up to three graduate independent-study credits under the supervision of a faculty member associated with our graduate program. With the approval of the graduate committee, a student may transfer a maximum of six credit hours for graduate work completed at other institutions or in other graduate programs at USM, including those listed in concentrations.
4. A student must register for at least one course every semester to maintain continuous enrollment. Students who do not maintain continuous enrollment will be dropped from the program and will have to reapply for admission to continue. Students who anticipate being unable to take classes may apply in writing for a fixed-term leave of absence.
5. A student whose grade point average (GPA) falls below 3.0 will be placed on academic probation. In this case a student will be allowed 12 semester hours to raise their GPA to, or above, the 3.0 minimum by taking only graduate-level courses. Students unsuccessful in raising their GPA during a probationary period may be dismissed from the program.

Master's Thesis Project Procedure

Students can earn up to 6 credits by completing a master's thesis/project. If a student chooses to do a master's thesis/project, he/she must select one of the following:

Option I: Master's Thesis. The student must write a master's thesis (STA/OPR/MAT 590).

Option II: Master's Project. The student must complete a master's project (STA/OPR/MAT 590).

Once an option has been selected, the student with his/her advisor must submit a proposal to the Graduate Committee for approval. The thesis/project must be approved by the Graduate Committee in advance.

Once the thesis/project topic has been approved by the Graduate Committee, the student must select a Thesis/Project Committee in consultation with his/her advisor. The Thesis/Project Committee will consist of at least three members, including the advisor. At most, one member of the Thesis/Project Committee may be from outside the Department of Mathematics and Statistics. The Graduate Committee will approve the Thesis/Project Committee.

Although the thesis/project work will be done under the direct supervision of the advisor, the student is expected to keep all committee members apprised of its progress. Once the thesis/project is completed, the student will produce a document describing his/her work. This document must adhere to the format specified by the Graduate Committee. Each Thesis/Project Committee member must be supplied with a copy of this document for review and approval at least two weeks before the intended date of defense.

The defense of the thesis/project should occur no less than 60 days after the approval of the Thesis/Project Committee and will consist of an oral presentation of its content to the University community. The Master's Thesis/Project requirement will be considered fulfilled when the thesis/project has been defended and the final document has been approved by all members of the Thesis/Project Committee.

The entire procedure for the fulfillment of the Master's Project requirement is the same as in the Master's Thesis, except that the project may be in the form of an expository paper in an area of mathematics/statistics/operations research, or it may be a solution of a practical problem in one of these areas, possibly related to the student's employment.

Financial Aid

A limited number of teaching assistantships and tuition waivers is available to students receiving regular graduate admission. Requests for an assistantship and/or a tuition waiver should accompany the application.

Graduate Certificate in Statistics

The Department also offers a graduate certificate in statistics for those candidates who are interested in attaining a working knowledge of statistical methodologies. Interested candidates should apply to the Graduate Admissions Office and submit current vitae, copies of all undergraduate/graduate transcripts, and at least one letter of recommendation. Applicants must hold a baccalaureate degree from an accredited institution with a cumulative GPA of at least 2.75, and must have completed MAT 153, MAT 281, MAT 282 or their equivalents. To earn the graduate certificate, a candidate must earn a minimum of 15 credits in statistics, at least 12 of which are at the graduate level. A cumulative GPA of 3.0 or better is required in these courses, and they must be completed within six years of enrollment (which is defined as the date when the application for admission to the graduate certificate is accepted by the Graduate Committee). Courses taken for the certificate may also be used toward the master's degree in statistics, as long as they are completed within six years of enrollment in the graduate program (Master of Science in Statistics).

Note: Academic matters not addressed by the *Program Description* should be referred to the Graduate Committee in writing (official letter) for prompt resolution.

MAT 501 Ethical Issues in Biostatistics

This course examines a variety of ethical controversies in biotechnology, medicine, and the environment. It also examines the major ethical principles in conducting biomedical research including ethical aspects related to the production and use of biomedical statistical analyses. Cr 2.

OPR/MAT 561 Deterministic Models in Operations Research

Formulation and analysis of deterministic models in operations research, linear programming, integer programming, project management, network flows, dynamic programming, non-linear programming, game theory, and group projects on practical problems from business and industry. Prerequisite: MAT 152 or MAT 295 or permission of instructor. Cr 3.

OPR/STA 562 Stochastic Modeling in Operations Research

Formulation and analysis of stochastic models in operations research, Markov chains, birth-death models, Markov decision models, reliability models, inventory models, applications to real world problems, and group projects on practical problems from business and industry. Prerequisite: MAT 281 or MAT 380 or permission of instructor. Cr 3.

OPR/STA/MAT 563 System Modeling and Simulation

Basic simulation methodology, general principles of model building, model validation and verification, random number generation, input and output analysis, simulation languages, applications to computer and communication networks, manufacturing, business, and engineering will be considered, and group projects on practical problems from business and industry. Prerequisite: MAT 281 or MAT 380 or permission of instructor. Cr 3.

OPR/STA 564 Queuing Networks

Queuing and stochastic service systems, birth-death processes, Markovian queues, open and closed Jackson networks, priority queues, imbedded Markov chain models, optimal control and design, stochastic scheduling, applications to computer and communication networks, manufacturing, business, and engineering will be considered, and projects on practical problems from business and industry. Prerequisite: MAT 281 or MAT 380 or permission of instructor. Cr 3.

MAT/OPR 571 Graph Theory

This course considers various properties of graphs and digraphs and includes applications to optimization questions and networks. Prerequisite: MAT 290 or permission of instructor. Cr 3.

STA 574 Statistical Programming

This course focuses on statistical programming using software SAS and/or STATA. Topics include, but are not limited to, data management, database programming, statistical graphics, generating statistical reports, Basic statistical procedures (routine), modi-

fying and creating MACROS (Routines) for non-standard statistical methods, etc. Prerequisite: MAT 212 or MAT 282 or permission of instructor. Cr 3.

STA/OPR/MAT 575 Graduate Internship and Writing

The course is intended to give students work experience with statistical data analysis through paid or unpaid internship opportunities. The student is expected to spend a minimum of 10 weeks working with area businesses on statistical problems approved by the graduate committee. The student will submit to the graduate committee a formal written report on the internship experience. The report format should adhere to all the elements of a formal project/ thesis. At least one oral presentation to the public is expected before the student receives a pass/fail grade. Students within the Biostatistics track are required to take 3 credits; two for the internship experience and one for the writing component. Cr var.

STA 580 Applied Statistical/Biostatistical Methods

Basics in distribution theory (focus on CLT and Sampling distributions); standard one-, two-sample problems (both parametric and nonparametric); one-, two-way ANOVA; estimation and testing theory (focus on normal theory and the principles of likelihood), various chi-square tests (Wald, Likelihood ratio, and Score tests); and analysis of contingency tables. Prerequisites: MAT 153 and MAT 282. Cr 3.

STA 581 Statistical Quality Control

Methods and philosophy of statistical process control, control charts for variables, control charts for attributes, CUSUM and EWMA control charts, some other statistical process control techniques, process capability analysis, and certain process design and improvements with experimental design. Prerequisite: MAT 282. Cr 3.

STA 582 Introduction to Longitudinal Data Analysis

This is an introductory course on how to use statistical techniques to analyze longitudinal (repeated measures) data and interpret the results from such analysis. The course will focus primarily on application of the various statistical models covered, with direct application illustrated using standard statistical software. Topics include random or mixed-effects models (also called HLM or multilevel models); covariance pattern models; generalized estimating equations (GEE) models; and missing data in longitudinal studies. Cr 3.

STA 583 Sample Survey Design and Analysis

In this course, students will develop an understanding of alternative probability sample designs and the statistical and practical factors that impact design choices. Develop the ability to select an estimator for a population parameter and an estimator of its

variance, given a sample design and auxiliary information (covariates). Introduce statistical principles and methods used to study disease and its prevention or treatment in human populations in clinical trials, including phase I to IV clinical trials. Ways of treatment allocation that will ensure valid inference on treatment comparison will be discussed. Other topics include sample size calculation and early stopping of a clinical trial and noncompliance. Prerequisite: MAT 282. Cr 3.

STA 584 Advanced Design and Analysis of Experiments

Topics covered include: one-way and two-way layouts, factorial experiments, fractional replications in factorial experiments, BIB and PBIB designs, and repeated measure design. Prerequisite: MAT 282. Cr 3.

STA 585 Linear Models and Forecasting

This is an introductory regression and forecasting modeling course. Topics include basic concepts of linear models and forecasting, simple and multiple linear regression, model building and diagnostics, time series regression and smoothing, and forecasting time series with ARIMA (Autoregressive Integrated Moving Average) and Box-Jenkins models. Prerequisite: MAT 282. Cr 3.

STA 587 Categorical Data Analysis

Topics to be examined include: two-way tables, generalized linear models, logistic and conditional

logistic models, loglinear models, fitting strategies, model selection, and residual analysis. Prerequisite: MAT 282. Cr 3.

STA 589 Survival Analysis

Survival and reliability concepts, mathematics of survival models, parametric and non-parametric estimates from complete and censored data, Kaplan-Meier estimators, regression models including Poisson regression and Cox's proportional hazards model, time-dependent covariates, and analysis of rates. Prerequisite: MAT 282. Cr 3.

STA/OPR/MAT 590 Master's Project/Thesis

The project must be approved by the graduate program committee in advance. Offered only as a pass/fail course. Prerequisites: full graduate standing and faculty approval. Cr 6.

STA 591 Topics in Biostatistics

Course will be offered on demand. Based on students' interests, the course may cover one or more of the following topics: clinical trials, computer intensive statistical methods, statistical methods in bioinformatics, environmental statistics, or a combination of these topics. Prerequisites: full graduate standing and faculty approval. Cr 3.

STA/OPR/MAT 599 Independent Study

An opportunity for graduate students to pursue areas not currently offered in the graduate curriculum. Cr 3.