DEPARTMENT OF DEMOGRAPHY

The Department of Demography offers a Master of Science degree and a Doctor of Philosophy degree in Applied Demography. The focus of the Ph.D. program is on the application of demographic analysis to policy issues encountered in the public and private sectors. The program faculty has two broad areas of focus: Health and Inequality, and Migration.

- M.S. in Applied Demography (p. 1)
- Ph.D. in Applied Demography (p. 1)

Master of Science in Applied Demography

The Master of Science in Applied Demography will give students a graduate level introduction to the study of population and how the tools of a demographer are used to guide policy decisions. At the end of the degree program, students will be able to: work with large and complex data sources; analyze these data using appropriate statistical tests; graphically present data using statistical techniques and GIS; and write reports and papers based on empirically based questions using real data.

Admission Requirements

Applicants for admission to the MS in Applied Demography must satisfy all University-wide graduate admission requirements and all applicants must possess a bachelor's degree.

Admission to the MS in Applied Demography program will be based on faculty review of the following required application materials:

1. A completed Graduate School Application Form
2. All official academic transcripts detailing completed undergraduate and graduate (if applicable) coursework
3. A letter of application describing the applicant’s academic and work backgrounds and goals and objectives related to the applicant’s MS program
4. A writing sample
5. Three letters of recommendation
6. For international students, results of the Test of English as a Foreign Language (TOEFL; minimum score of 60 on the paper version, 79 on the internet version), or results of the International English Language Testing System (IELTS; a minimum score of 6.5).

Degree Requirements

The degree plan includes 21 hours of foundation (required) courses, 6 hours of free electives, and a 3 hour capstone course that will require a final exit paper.

A. 21 semester credit hours of core courses:
   - DEM 5013 Demographic Methods of Analysis
   - DEM 5093 GIS for Population Science
   - DEM 5113 Social Demography and Community Trends
   - DEM 5213 Introduction to Population Data
   - DEM 5273 Statistics for Demographic Data I
   - DEM 5283 Statistics for Demographic Data II
   - DEM 5033 Mortality
   - DEM 5043 Migration
   - DEM 6383 Capstone

B. 6 semester credit hours of electives approved by the Graduate Advisor of Record

C. 3 semester credit hours of the Capstone Course

D. Comprehensive Exam

The comprehensive exam will be a research paper evaluated by a committee of the departmental faculty.

Total Credit Hours

30

Doctor of Philosophy Degree in Applied Demography

Students accepted for admission into the Ph.D. program in Applied Demography have the opportunity to engage in advanced study and research in the field of Applied Demography as it applies to questions in such areas as public policy and administration, urban and regional planning, life sciences, medicine, business, and the social sciences. Depending on their area of focus, students may work with faculty from a variety of areas of study offered at UTSA.

The Applied Demography program prepares students to address the expanding education and research problems that are at the intersection of demography, public policy and administration, education, public health, and health care. Students may pursue careers in university departments that teach demography, university-based medical centers, public-health related organizations and agencies, health science centers, national and corporate settings, and local, state and federal government. Students are trained to examine the effects of demographic factors on policy - both private and public.

The regulations for this degree comply with the general University regulations (refer to Student Policies, General Academic Regulations, and the Graduate Catalog, Doctoral Degree Regulations).

Admission Requirements

Applicants for admission to the Ph.D. program in Applied Demography must satisfy all University-wide graduate admission requirements. Entrance to the Ph.D. program can be gained through one of two tracks:

1. Applicant possesses a bachelor's degree (Track 1)
2. Applicant possesses a Master of Science degree from an accredited university in demography/sociology, geography, economics, biology, political science, statistics, mathematics, business, or a similar field (Track 2).

Applicants must submit the following items:

1. A completed Graduate School Application Form
2. All official academic transcripts detailing completed undergraduate and graduate coursework
3. A letter of application describing the applicant’s academic and work backgrounds and goals and objectives related to the applicant’s Ph.D. program
4. A writing sample
5. Three letters of recommendation
6. Graduate Record Examination (GRE) scores with their application completed no more than five years prior to the Ph.D. student’s date of application. All applicants are required to submit scores from the GRE math, verbal, and analytical portions of the examination and scores for a related specialty area. These scores will be considered as only one element in the evaluation of applicants.

Applicants admitted to the Ph.D. program may receive unconditional, conditional, or probationary admission status. Only completed applications will be reviewed. Admission is competitive. Satisfying the minimum requirements does not guarantee admission. In any given application cycle, Ph.D. applicants will be evaluated on the strength of their application materials and also against other applicants in the same pool.

Degree Requirements
The Applied Demography Ph.D. requires students following Track 1 to complete a minimum of 54 hours of organized coursework, 12 hours of doctoral research credits, and a minimum of 12 hours of dissertation credits for a total of at least 78 hours. Students following Track 2 requires students to complete a minimum of 42 hours of organized coursework and a minimum of 12 hours of dissertation credits for a total of at least 54 hours.

The doctoral program has a base of core courses that will result in all students having a firm grounding in demography and related methodological training with students then choosing their area of specialization. All students are expected to enter the program with some proficiency and aptitude for utilizing statistical software (i.e., SAS, Stata, R). Basic ability to use the DEM-Research server to import and transform data sets and conduct basic statistical analyses is a requirement to be successful with a number of courses, and skills demonstrated by this ability are important to being an applied demographer.

Track 1 Requirements
Program of Study for Students Admitted Without a Master’s Degree
All students who are accepted into the Doctoral program without a Master’s degree (or its coursework equivalent) must successfully complete the program of study below. Students transferring to the Doctoral program from accredited graduate programs but lacking a Master’s degree may receive approval to transfer some coursework to UTSA, pending review by the Graduate Program Committee.

Earning a Master’s Degree
Students who complete Sections A-C of the Program of Study (30 credit hours), including the Capstone Course 1, will be awarded the M.S. degree, and will be given permission to work toward completion of doctoral requirements. Students who fail their final paper in the Capstone Course may be given one of two options by their Advisory Committee. Those options are: permission to rewrite the final paper based on recommendations of the Instructor OR permission to pursue a terminal M.S. degree according to the requirements of that degree program. All students who successfully complete all required components will earn an M.S. in Applied Demography.

1 In consultation with the instructor, students will be required to write a final paper in DEM 6383 Capstone on a topic of their choice. This will serve as the comprehensive examination requirement for earning an M.S. degree.

Program of Study for Ph.D. in Applied Demography – Track 1
A. Core Methods, Statistics, and Demography Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>DEM 5013</td>
<td>Demographic Methods of Analysis</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5093</td>
<td>GIS for Population Science</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5113</td>
<td>Social Demography and Community Trends</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5213</td>
<td>Introduction to Population Data</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5273</td>
<td>Statistics for Demographic Data I</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5283</td>
<td>Statistics for Demographic Data II</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5033</td>
<td>Mortality</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5043</td>
<td>Migration</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5083</td>
<td>Fertility</td>
<td>3</td>
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</tbody>
</table>

B. Free Elective Courses
6 semester credit hours of free electives approved by the Graduate Advisor of Record

C. Capstone Course

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEM 6383</td>
<td>Capstone</td>
<td>3</td>
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</table>

D. Advanced Courses
24 semester credit hours of advanced courses must be completed to earn the degree.

1. 3 semester credit hours of required courses: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEM 7243</td>
<td>General Research Methods for Demographers</td>
<td>3</td>
</tr>
</tbody>
</table>

2. 3 semester credit hours selected from the following courses: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEM 7023</td>
<td>Advanced Methods of Demographic Analysis</td>
<td>3</td>
</tr>
<tr>
<td>DEM 7223</td>
<td>Event History Analysis</td>
<td>3</td>
</tr>
<tr>
<td>DEM 7263</td>
<td>Spatial Demography</td>
<td>3</td>
</tr>
<tr>
<td>DEM 7473</td>
<td>Applied Hierarchical Modeling</td>
<td>3</td>
</tr>
</tbody>
</table>

3. 6 semester credit hours selected from the following courses: 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEM 7033</td>
<td>Mortality</td>
<td>3</td>
</tr>
<tr>
<td>DEM 7043</td>
<td>Migration</td>
<td>3</td>
</tr>
<tr>
<td>DEM 7083</td>
<td>Fertility</td>
<td>3</td>
</tr>
</tbody>
</table>

4. 12 semester credit hours to be selected from either the Applied Demography or Sociology Concentration

E. Doctoral Research

12 semester credit hours of Doctoral Research 12

F. Doctoral Dissertation

12 semester credit hours of Doctoral Dissertation 12

Total Credit Hours 78

All courses are to be selected with the approval of the Graduate Advisor of Record.

Track 2 Requirements
Program of Study for Students Admitted With A Master’s Degree (from another institution)
All students who are accepted into the Doctoral program with a Master’s degree (or its coursework equivalent) must successfully complete the program of study below. Students transferring to the Doctoral program from accredited graduate programs may receive approval to transfer some coursework to UTSA, pending review by the Graduate Program Committee.

Program of Study for Ph.D. in Applied Demography – Track 2
A. Core Research and Statistics Courses:

1. 9 semester credit courses of required courses: 9

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEM 5013</td>
<td>Demographic Methods of Analysis</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5093</td>
<td>GIS for Population Science</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5113</td>
<td>Social Demography and Community Trends</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5213</td>
<td>Introduction to Population Data</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5273</td>
<td>Statistics for Demographic Data I</td>
<td>3</td>
</tr>
<tr>
<td>DEM 5283</td>
<td>Statistics for Demographic Data II</td>
<td>3</td>
</tr>
</tbody>
</table>
Demography

2. 3 semester credit hours selected from the following courses:  
DEM 7023 Advanced Methods of Demographic Analysis  
DEM 7223 Event History Analysis  
DEM 7263 Spatial Demography  
DEM 7473 Applied Hierarchical Modeling

B. Core Demography Courses:  
1. 9 semester credit hours of required courses:  
DEM 7013 Demographic Methods of Analysis  
DEM 7093 GIS for Population Science  
DEM 7113 Social Demography and Community Trends  
2. 9 semester credit hours selected from the following courses:  
DEM 7033 Mortality  
DEM 7083 Fertility  
DEM 7043 Migration  or DEM 7053 International Migration

C. Advanced Courses:  
12 semester credit hours to be selected from either the Applied Demography Concentration or Sociology Concentration

D. Doctoral Dissertation:  
12 semester credit hours of Doctoral Dissertation  
Total Credit Hours 54

All courses are to be selected with the approval of the Graduate Advisor of Record.

Applied Demography Concentration  
12 semester credit hours selected from the following courses:  
DEM 7063 Applied Demography in Policy Settings  
DEM 7073 Disparities in Health and Health Care  
DEM 7123 Applied Demography in Education  
DEM 7153 Applied Demography in Public Health  
DEM 7173 Applied Demography in Urban and Regional Planning  
DEM 7183 Social and Economic Impact Assessment  
DEM 7253 Survey Methods for Demographers  
DEM 7413 Demography of Inequality and Poverty  
DEM 7423 Demography of the Labor Force and Labor Markets  
DEM 7433 Demography of Race and Ethnicity  
DEM 7443 Demography of Adolescence and the Transition to Adulthood  
DEM 7453 Sexual and Reproductive Health  
DEM 7463 Family Demography  
DEM 7783 Internship in Applied Demography  
DEM 7801 Directed Research  or DEM 7803 Directed Research  
DEM 7811 Doctoral Research  or DEM 7813 Doctoral Research  or DEM 7816 Doctoral Research  
DEM 7903 Special Topics

Sociology Concentration  
12 semester credit hours selected from Health, Immigration, or Family:  
1. Health  
a. 3 semester credit hours of required courses:  
DEM 7073 Disparities in Health and Health Care  
b. 9 semester credit hours from the following courses:  
DEM 7153 Applied Demography in Public Health  
SOC 5133 Sociology of Health and Health Care  
SOC 6713 Health Care System in the United States  
SOC 6723 Religion, Health and Mortality  
SOC 6733 The Social Psychology of Health and Illness  
2. Immigration  
a. 3 semester credit hours of required courses:  
DEM 7433 Demography of Race and Ethnicity  
b. 9 semester credit hours from the following courses:  
SOC 5223 Mexican Americans: Community, Culture, and Class  
SOC 5253 Border Studies  
SOC 6043 Immigration and Society  
3. Family  
a. 3 semester credit hours of required courses:  
DEM 7443 Demography of Adolescence and the Transition to Adulthood  
b. 9 semester credit hours from the following courses:  
SOC 5123 Family Contexts and Social Change  
SOC 5323 Sociology of Childhood  
SOC 6743 Religion, Spirituality and Families  
SOC 6753 Racial/Ethnic Minority Families in the United States  
SOC 6763 Youth and Emerging Adulthood  
DEM 7063 Applied Demography in Policy Settings  
DEM 7123 Applied Demography in Education  
DEM 7173 Applied Demography in Urban and Regional Planning  
DEM 7183 Social and Economic Impact Assessment  
DEM 7253 Survey Methods for Demographers  
DEM 7413 Demography of Inequality and Poverty  
DEM 7423 Demography of the Labor Force and Labor Markets  
DEM 7783 Internship in Applied Demography

Primary Advisor
Initially all students will be advised by the Graduate Advisor of Record (GAR). During the first year in the program, students are encouraged to learn about and meet all faculty members in the Department. Once students entering with a B.A./B.S. (without a Master's Degree) have completed between 30 and 48 credit hours, students should identify a Primary Advisor (not to be completed later than the completion of 60 hours).

Qualifying Exam
Each Ph.D. candidate in the Department of Demography must pass a two-day examination in demography. This qualifying exam is normally taken after the candidate’s course work has been substantially completed. In order to take the exam, students matriculating on Track I (entering with
a B.S./B.A., without a Master’s Degree) must have completed 54 credit hours of coursework. Student in Track II or III must complete 30 credit hours of coursework prior to be eligible for the comprehensive exams. In addition to the credit hour requirements, students must have selected a dissertation topic. The exam will be administered during the summer semester after the requisite credit hours of coursework are complete, and the time of the exam will be set by the GAR in consultation with the Graduate Program Committee (GPC).

**Dissertation Stage**

**Committee**

Students are encouraged to work with their Primary Advisor in advance of the qualifying exam to also define a Dissertation Committee. The Dissertation Committee must be comprised of at least four (4) members of the graduate faculty. One of these committee members may be from outside the Department of Demography. The composition of the Committee should, in principle, provide a group of research scholars and scientists who constitute an important resource to the candidate and his/her dissertation research.

**Proposal Defense**

Upon successful completion of the qualifying examination students will need to defend their dissertation proposal. Once the dissertation proposal has been approved by the student’s Dissertation Committee, they may proceed with the dissertation project. If at any time the project changes significantly from what was originally approved, the student will have to orally defend the dissertation proposal again for approval.

**Admission to Candidacy**

To be admitted to candidacy for the doctoral degree in Applied Demography, the student must receive approval from the GPC. Approval by GPC is contingent upon the following:

1. Satisfactory completion of all required courses and an approved Program of Study form on file with the Graduate Advisor of Record;
2. Cumulative grade point average of at least 3.0 in all coursework undertaken since matriculation in the program;
3. Report by the Qualifying Examination Committee that the student has passed the examination and;
4. Report by the student’s Primary Advisor (Dissertation Chair) and other graduate faculty members, as appropriate, that the student has clearly evidenced the potential for productive and independent investigation with a successful dissertation defense.

**Supervision of the Dissertation Research**

After formal approval of the Doctoral Dissertation Committee, the Dissertation Chair may convene the Doctoral Dissertation Committee at appropriate intervals to discuss with the candidate his/her research progress and projected future work. The Doctoral Dissertation Committee may approve or direct alterations in the research plans within the general context of the dissertation proposal.

**Submission of the Dissertation**

After all members of the Doctoral Dissertation Committee agree that the research has progressed sufficiently for submission of the dissertation, a draft of the dissertation shall be submitted to the Dissertation Chair and to all other members of the Doctoral Dissertation Committee. It is the responsibility of the candidate to follow the guidelines for preparation of the dissertation provided by the Graduate School Dean’s Office. The candidate also has the responsibility to ensure adequate time for review and modification of the dissertation in accordance with the schedule of deadlines provided each term by the Graduate School Dean’s Office.

**Final Oral Examination**

A satisfactory final oral examination is required for the approval of a dissertation. After the Dissertation Committee makes a decision, which must be unanimous, to accept a dissertation for examination, the supervising professor notifies the Graduate School. All members of the Dissertation Committee must be satisfied that the student has:

1. completed the work assigned by the committee
2. passed all examinations required by the program’s Graduate Program Committee, including the final oral examination
3. completed a dissertation that is an independent investigation in the major field, and that itself constitutes a contribution to knowledge.

Once this is complete, the Dissertation Committee members sign the approval sheets for the doctoral dissertation and make an official recommendation to the academic College and the Dean of the Graduate School that the doctoral degree be awarded.

**Recommendation for granting of the degree**

The candidate shall submit to the Graduate School Office the final electronic copy of the dissertation. Once received, the College of Public Policy and the Graduate School will consider the recommendation for granting of the degree. If the Council does not approve recommendation, the matter will be referred to Committee on Graduate Studies with recommendations for remedial action. If the Council does approve, the Dean of the Graduate School (UTSA) will notify the President that the candidate has fulfilled all requirements for the degree of Doctor of Philosophy.

**Demography (DEM) Courses**

**DEM 5013. Demographic Methods of Analysis. (3-0) 3 Credit Hours.**

Prerequisite: Consent of instructor. Examines basic materials and methods used in demography, including methods for measuring levels and rates of population change, fertility, mortality, migration (both domestic and international), distribution, and composition. Emphasis on cohort and period patterns of change, methods of standardization, and life table methods and population projection methods. (Same as DEM 7013. Credit cannot be earned for both DEM 5013 and DEM 7013.) Course Fee: STSP $9.

**DEM 5033. Mortality. (3-0) 3 Credit Hours.**

Prerequisite: DEM 5113 or consent of instructor. Theoretical and demographic empirical analysis of current and historical issues concerning epidemiological/health transition, demographic and socioeconomic differentials in health and mortality, infant and child mortality, status of women and health, environment and health, demographic change and nutrition, health care systems, and health planning policies in the United States and in other developed and developing countries. Explores advanced sources of demographic data, measures, and methods of analyses used to analyze the levels and changes in these processes used in applied demographic settings. (Same as DEM 7033. Credit cannot be earned for both DEM 5033 and DEM 7033.) Course Fee: STSP $9.
DEM 5043. Migration. (3-0) 3 Credit Hours.
Prerequisite: DEM 5113 or consent of instructor. Examines patterns, trends and consequences of migration and immigration in the United States and other parts of the world. Explores historical and current theoretical perspectives on migration, analysis of historical, current and projected patterns of migration in the United States and other parts of the world, and examines effects of migration on other demographic, economic, social, and political factors in the United States and elsewhere. (Same as DEM 7043. Credit cannot be earned for both DEM 5043 and DEM 7043.) Course Fee: STSP $9.

DEM 5083. Fertility. (3-0) 3 Credit Hours.
Prerequisite: DEM 5113 or consent of instructor. Theoretical and empirical overview of major issues and methodological approaches in the demographic study of human fertility in developing and developed countries. Explores advanced sources of demographic data, measures, and demographic methods of analyses used to analyze the levels and changes in these processes used in applied settings. (Same as DEM 7083. Credit cannot be earned for both DEM 5083 and DEM 7083.) Course Fee: STSP $9.

DEM 5093. GIS for Population Science. (3-0) 3 Credit Hours.
Prerequisite: Consent of instructor. This course is designed to give graduate students interested in population science and policy fields a hands-on introduction to the use of Geographic Information Systems (GIS). The course will cover geographic data types, spatial data creation and management, exploratory spatial analysis, and basics of geospatial modeling. At the close of the course, students are expected to be able to: create and modify geographic data, perform GIS visualization of spatial data, use database software to manage geographic data and perform descriptive analysis of spatial data using industry-standard GIS software. (Same as DEM 7093. Credit cannot be earned for both DEM 5093 and DEM 7093.) Course Fee: STSP $9.

DEM 5113. Social Demography and Community Trends. (3-0) 3 Credit Hours.
This seminar is a survey of the major themes in demographic research. It will focus on the causes and consequences of demographic change and world population problems and policies, and we will explore the major theoretical perspectives focusing on the interrelationship of social and environmental causes of population change and the dynamics of human populations. (Same as DEM 7113. Credit cannot be earned for both DEM 5113 and DEM 7113.) Course Fee: STSP $9.

DEM 5213. Introduction to Population Data. (3-0) 3 Credit Hours.
Prerequisite: Consent of instructor. The purpose of this course is to introduce students to demographic data and how to use them effectively. Students will use statistical software to learn how to read-in raw data, make data modifications relative to research goals, assess data quality, and conduct basic descriptive statistics. The course will also teach students how to make use of data codebooks and request the use of restricted data. Course Fee: STSP $9.

DEM 5273. Statistics for Demographic Data I. (3-0) 3 Credit Hours.
Prerequisite: Consent of instructor. This course covers two main areas of statistical analysis. First, techniques for the description of univariate and bivariate distributions are covered, including summary statistics, confidence intervals, correlations, graphical exploratory methods and hypothesis testing for two and more groups. Also covered is the analysis of categorical data, including analysis of contingency tables and measures of association for categorical data. Secondly, ordinary least squares regression analysis and analysis of variance procedures and their diagnostics are covered. All methods are complemented by the application to demographic survey data sets and instruction in the Linux environment using either SAS, STATA or R statistical programming languages. (Same as DEM 7273. Credit cannot be earned for both DEM 5273 and DEM 7273.) Course Fee: STSP $9.

DEM 5283. Statistics for Demographic Data II. (3-0) 3 Credit Hours.
Prerequisite: DEM 5273 or consent of instructor. This course represents an in-depth coverage of the general linear model framework, including multivariable regression analysis, logistic and Poisson regression and multilevel modeling. Model fit, model comparison and regression diagnostics for each method are covered. In addition to these topics, students are introduced to techniques for dealing with missing data including multiple imputation. All methods are complemented by the application to demographic survey data sets and instruction in the Linux environment using both the SAS and R/S-plus statistical programming languages. (Same as DEM 7283. Credit cannot be earned for both DEM 5283 and DEM 7283.) Course Fee: STSP $9.

DEM 6383. Capstone. (3-0) 3 Credit Hours.
Prerequisite: Completion of 21 semester credit hours of Required Courses. This course is designed to prepare students to write a final exit paper that serves as the comprehensive exam for completion of the MS program. It covers topics including but not limited to: Demographic Data, Research Methods, Quantitative Analysis, Demographic Processes, Health, and/or Inequality. The grade report for the course is either "CR" (satisfactory performance on the final exit paper) or "NC" (unsatisfactory performance on the final exit paper). Course Fee: STSP $9.

DEM 7013. Demographic Methods of Analysis. (3-0) 3 Credit Hours.
Prerequisite: Consent of instructor. Examines basic materials and methods used in demography, including methods for measuring levels and rates of population change, fertility, mortality, migration (both domestic and international), distribution, and composition. Emphasis on cohort and period patterns of change, methods of standardization, and life table methods and population projection methods. (Formerly titled "Demographic Methods of Analysis I") (Same as DEM 5013. Credit cannot be earned for both DEM 5013 and DEM 7013.) Course Fee: STSP $9.

DEM 7023. Advanced Methods of Demographic Analysis. (3-0) 3 Credit Hours.
Prerequisite: DEM 7013 or consent of instructor. Examines use of advanced demographic and statistical methods of analysis of population and sample data, including simulating, adjusting, and smoothing; advanced survival analysis, methods of rate decomposition and standardization, population estimation, population projections and evaluations of each. Considers applications of demographic techniques in marketing, management and impact analyses in business and government. (Formerly titled "Demographic Methods of Analysis II.") Course Fee: STSP $9.
DEM 7033. Mortality. (3-0) 3 Credit Hours. 
Prerequisite: DEM 7113 or consent of instructor. Theoretical and demographic empirical analysis of current and historical issues concerning epidemiological/health transition, demographic and socioeconomic differentials in health and mortality, infant and child mortality, status of women and health, environment and health, demographic change and nutrition, health care systems, and child health planning policies in the United States and in other developed and developing countries. Explores advanced sources of demographic data, measures, and methods of analyses used to analyze the levels and changes in these processes used in applied demographic settings. (Same as DEM 5033. Credit cannot be earned for both DEM 5033 and DEM 7033.) Course Fee: STSP $9.

DEM 7043. Migration. (3-0) 3 Credit Hours. 
Prerequisite: DEM 7113 or consent of instructor. Examines patterns, trends and consequences of migration and immigation in the United States and other parts of the world. Explores historical and current theoretical perspectives on migration, analysis of historical, current and projected patterns of migration in the United States and other parts of the world, and examines effects of migration on other demographic, economic, social, and political factors in the United States and elsewhere. (Same as DEM 5043. Credit cannot be earned for both DEM 5043 and DEM 7043.) Course Fee: STSP $9.

DEM 7053. International Migration. (3-0) 3 Credit Hours. 
Prerequisite: DEM 7113 or consent of instructor. Examines the determinants and consequences of international migration from theoretical and empirical perspectives. Explores impacts on the migrants themselves and the countries of origin and destination. Specific issues include global competition for skilled labor, the concept of 'replacement migration', and the role of the state in creating and regulating international population movements. Examines public policy implications of the volume and composition of migration for origin and destination countries. Course Fee: STSP $9.

DEM 7063. Applied Demography in Policy Settings. (3-0) 3 Credit Hours. 
Prerequisites: DEM 7013, DEM 7023 and DEM 7113, or consent of instructor. Student must have a minimum of 30 credit hours in the Applied Demography doctoral program. Examines the roles, duties and implications of being an applied demographer in private- and public-sector policy settings, including required professional skills and knowledge. Provides practical case-study based experience in applying demographic knowledge and methods to such areas of applied analysis as marketing research, site location analysis, impact analyses, advertising analyses, program evaluation, short-term and long-term planning, and similar areas of policy development. Emphasis on interactive and team-based case-study analyses result in written reports, and findings presented to governmental or private-sector decision makers. Course Fee: STSP $9.

DEM 7073. Disparities in Health and Health Care. (3-0) 3 Credit Hours. 
Prerequisites: DEM 7013 and DEM 7113 or consent of instructor. Overview of current and historical trends and differentials of health, health care access, and health care delivery systems among different racial/ethnic, socioeconomic, and residence area groups in the United States and elsewhere. Examines differentials in the types and rates of incidence and occurrence of alternative forms of disease and disorders, and access to physicians, hospitals and forms of treatment across demographic and socioeconomic groups. Data and methods for assessing such disparities are reviewed and alternative policy options for decreasing such disparities are discussed. Course Fee: STSP $9.

DEM 7083. Fertility. (3-0) 3 Credit Hours. 
Prerequisite: DEM 7113 or consent of instructor. Theoretical and empirical overview of major issues and methodological approaches in the demographic study of human fertility in developing and developed countries. Explores advanced sources of demographic data, measures, and demographic methods of analyses used to analyze the levels and changes in these processes used in applied settings. (Same as DEM 5083. Credit cannot be earned for both DEM 5083 and DEM 7083.) Course Fee: STSP $9.

DEM 7093. GIS for Population Science. (3-0) 3 Credit Hours. 
Prerequisite: Consent of instructor. This course is designed to give graduate students interested in population science and policy fields a hands-on introduction to the use of Geographic Information Systems (GIS). The course will cover geographic data types, spatial data creation and management, exploratory spatial analysis, and basics of geospatial modeling. At the close of the course, students are expected to be able to: create and modify geographic data, perform GIS visualization of spatial data, use database software to manage geographic data and perform descriptive analysis of spatial data using industry-standard GIS software. (Same as DEM 5093. Credit cannot be earned for both DEM 5093 and DEM 7093.) Course Fee: STSP $9.

DEM 7113. Social Demography and Community Trends. (3-0) 3 Credit Hours. 
This seminar is a survey of the major themes in demographic research. It will focus on the causes and consequences of demographic change and world population problems and policies, and we will explore the major theoretical perspectives focusing on the interrelationship of social and environmental causes of population change and the dynamics of human populations. (Same as DEM 5113. Credit cannot be earned for both DEM 5113 and DEM 7113.) Course Fee: STSP $9.

DEM 7123. Applied Demography in Education. (3-0) 3 Credit Hours. 
Prerequisite: Consent of instructor. Objectives for this course are focused upon development of an understanding of demographic issues in the field of education and skills in the application of demographic methods and techniques in this area. Topics will include issues of population dynamics related to school enrollment and completion and application of demographic techniques relevant for education related topics. Course Fee: STSP $9.

DEM 7153. Applied Demography in Public Health. (3-0) 3 Credit Hours. 
Prerequisite: Consent of instructor. Course work and readings will provide overview of demographic methods applied to examination of issues in the area of public health. A range of public health and epidemiologic topics will be reviewed in relation to issues related to demography and demographic methods. Assignments will provide students with opportunities to examine key issues in public health and explore specific topics of public health relevance. Course Fee: STSP $9.

DEM 7173. Applied Demography in Urban and Regional Planning. (3-0) 3 Credit Hours. 
Prerequisite: Consent of instructor. Urban and regional planning is strongly dependent on information generated from applied demography. This course will review the field of urban and regional planning with particular reference to the use of demographic information. Elements of the course will emphasize learning and applying traditional and innovative approaches to estimating and projecting population for small areas with particular reference to issues of geography and land use patterns. Course Fee: STSP $9.
**DEM 7183. Social and Economic Impact Assessment. (3-0) 3 Credit Hours.**
Prerequisite: Consent of instructor. The purpose of this course is to provide students with an understanding of the requirements of, methodologies for, and issues in, socioeconomic impact assessment and to provide practical, working experience with socioeconomic impact assessment techniques. Course Fee: STSP $9.

**DEM 7223. Event History Analysis. (3-0) 3 Credit Hours.**
Prerequisites: DEM 7013, DEM 7023, and DEM 7273 or consent of instructor. This course covers event history analysis for events such as unemployment spans, birth intervals, years of healthy life lived, and other codependent demographic events. Further, this course will provide a survey of demographic analytical methods for empirically explaining variation in timing of demographic events. This course will use SAS, R or STATA software. (Formerly titled "Advanced Methods for Life Table Analysis.") Course Fee: STSP $9.

**DEM 7243. General Research Methods for Demographers. (3-0) 3 Credit Hours.**
Prerequisites: DEM 7013 and DEM 7113 or consent of instructor. Examines key aspects of research methodology and provides an understanding and overview of practical and theoretical methods used to include sampling, interviewing, questionnaire and survey construction, and methods of analysis. The course will examine alternative research perspectives used in writing major publishable articles, and a dissertation in demography. Course Fee: STSP $9.

**DEM 7253. Survey Methods for Demographers. (3-0) 3 Credit Hours.**
Prerequisite: DEM 7243 or consent of instructor. This course examines the use of survey methodology and the research process, with special attention given to survey instruments as they relate to demographic research. Topics to be covered include a general overview of large demographic surveys, modes of data collection, questionnaire design, reliability and validity, sampling, and analysis incorporating survey designs for various large-scale demographic surveys. Special attention will be given to data collected by the U.S. Bureau of the Census. Statistical software applications will be used as they relate to demographic survey instruments. (Formerly titled "General Research Methods for Demographers II.") Course Fee: STSP $9.

**DEM 7263. Spatial Demography. (3-0) 3 Credit Hours.**
Prerequisite: DEM 7093 or consent of instructor. This course will give an in-depth coverage of spatial demographic processes including models of migration, multiregional population growth, and spatial dependence in vital rates. The course will include a brief introduction to Geographic Information Systems, availability of spatial data and construction of geo-databases for population studies. The course will have a large analytical component with topics to include global and local spatial autocorrelation, analysis of spatial point patterns, neighborhood statistics and spatial regression analysis. Emphasis is placed on usage of computer software for the analysis of population data. Course Fee: STSP $9.

**DEM 7273. Statistics for Demographic Data I. (3-0) 3 Credit Hours.**
Prerequisite: Consent of instructor. This course covers two main areas of statistical analysis. First, techniques for the description of univariate and bivariate distributions are covered, including summary statistics, confidence intervals, correlations, graphical exploratory methods, and hypothesis testing for two and more groups. Also covered is the analysis of categorical data, including analysis of contingency tables and measures of association for categorical data. Second, ordinary least squares regression analysis and analysis of variance procedures and their diagnostics are covered. All methods are complemented by the application to demographic survey data sets and instruction in the Linux environment using either SAS, STATA or R statistical programming languages. (Formerly titled "Univariate and Categorical Statistical Analysis for Demographic Data.") (Same as DEM 5273. Credit cannot be earned for both DEM 5273 and DEM 7273.) Course Fee: STSP $9.

**DEM 7283. Statistics for Demographic Data II. (3-0) 3 Credit Hours.**
Prerequisite: DEM 7273 or consent of instructor. This course represents an in-depth coverage of the general linear model framework, including multivariable regression analysis, logistic and Poisson regression and multilevel modeling. Model fit, model comparison and regression diagnostics for each method are covered. In addition to these topics, students are introduced to techniques for dealing with missing data including multiple imputation. All methods are complemented by the application to demographic survey data sets and instruction in the Linux environment using both the SAS and R/S-plus statistical programming languages. (Formerly titled "Multivariate Statistical Analysis for Demographic Data.") (Same as DEM 5283. Credit cannot be earned for both DEM 5283 and DEM 7283.) Course Fee: STSP $9.

**DEM 7413. Demography of Inequality and Poverty. (3-0) 3 Credit Hours.**
Prerequisite: Consent of instructor. This seminar provides an overview of poverty in the United States from a comparative perspective. It addresses the determinants of poverty, with special attention given to different demographic groups, such as single women with children, race and ethnic minorities, and urban and rural residence. Among the topics to be discussed include the differences between the European and U.S. approach to measuring poverty; the relationship between welfare policies, population growth, and economic development; race and welfare; and the 1996 welfare reform in the United States and its consequences to date. Much emphasis will be given to poverty-abatement strategies. (Formerly titled "Demographic Perspectives on Poverty.") Course Fee: STSP $9.

**DEM 7423. Demography of the Labor Force and Labor Markets. (3-0) 3 Credit Hours.**
Prerequisite: Consent of instructor. This course introduces students to the study of demographics characteristics of the labor force and of labor markets. It addresses such major social and economic trends as the increased labor force participation of women, the integration of formerly disenfranchised groups into white-collar occupations, and the emergence of a service society. Literature that can help explain these trends will come from gender studies, race and ethnicity, and post-industrialization, in addition to demographic research. Other topics to be discussed cover the study of occupational upgrading; employment, unemployment, and underemployment; regional shifts in employment; the work family relationship; and the role of social policy regarding work, family, and fertility. Course Fee: STSP $9.
**DEM 7433. Demography of Race and Ethnicity. (3-0) 3 Credit Hours.**
Prerequisite: Consent of instructor. This course is designed to introduce students to the study of the demography of racial and ethnic groups in the United States with some attention to other parts of the world. Using theoretical perspectives drawn from the demographic and race and ethnic literatures, the course will examine demographic, social, and economic variations among major racial and ethnic groups. The course is divided into a series of broad topics covering the study of the demography of racial and ethnic groups including an overview of the construction of race and ethnicity; theoretical perspectives; the foundations of inequality; data and methodological issues; the three population processes (fertility, mortality, and migration); intermarriage and multiracial and pan-ethnic identities; marriage, family, and household arrangements; and labor market and socioeconomic outcomes. Course Fee: STSP $9.

**DEM 7443. Demography of Adolescence and the Transition to Adulthood. (3-0) 3 Credit Hours.**
Prerequisite: Consent of instructor. Demographers have long considered adolescence and early adulthood as a critical period when significant life choices are made. Important milestones overlap during these years as young people leave school, begin work, form romantic relationships, become independent from parents and begin forming their own families. This seminar explores the different factors that define the timing and progression of this transition and explores demographic and policy implications across different social and cultural contexts. It also highlights the relevance of the life course for the understanding of demographic processes. Course Fee: STSP $9.

**DEM 7453. Sexual and Reproductive Health. (3-0) 3 Credit Hours.**
Prerequisite: Consent of instructor. The purpose of this course is to introduce students to a number of sexual and reproductive health issues nationally and internationally. The course content will emphasize demographic, social, economic, behavioral, and political factors that affect family planning, reproductive health, fertility, parenthood, and pregnancy/birth outcomes. Emergent sources of data for sexual and reproductive health issues will be discussed. Course Fee: STSP $9.

**DEM 7463. Family Demography. (3-0) 3 Credit Hours.**
Prerequisite: Consent of instructor. This seminar will examine changes in family behaviors and household relationships from a socio-demographic perspective. Specific topics include union formation and dissolution, childbearing, parenthood, intergenerational relationships, and the intersection of gender, work, and family. Although this course will focus primarily on post-World War II United States, some attention will also be given to recent family changes in other industrialized nations and in the developing world. Demographic data sources pertaining to families and households will be discussed. Course Fee: STSP $9.

**DEM 7473. Applied Hierarchical Modeling. (3-0) 3 Credit Hours.**
Prerequisite: DEM 7283 or consent of instructor. This course will immerse students in the area of hierarchical modeling. Hierarchical models are fast becoming ubiquitous in the social and behavioral sciences as the availability of longitudinal, geocoded-restricted and panel data sources become the norm. This class will apply techniques of Bayesian computation to hierarchical modeling with less emphasis on the theory of Bayesian analysis, and more on the practical side of its use. Topics will include linear and generalized linear mixed effects models, with special attention to structured random effect models, models for longitudinal data and the application of Bayesian computational techniques. Data examples will include the use of social and health survey data sources, and all students are expected to complete a project using the methods presented in class to their own research interests. Course Fee: STSP $9.

**DEM 7701. Professional Development Colloquium. (1-0) 1 Credit Hour.**
Prerequisite: Consent of instructor. This is a professional development course focusing on the field of applied demography. Topics will vary by semester, and may include such things as grant writing, proposal preparation, peer-reviewed journal publication procedures, presentation development, demographic data sources and literature, grant funding sources, and job hunting. Other professional development topics will be addressed. May be repeated for credit when topics vary. Course Fee: STSP $3.

**DEM 7783. Internship in Applied Demography. (0-0) 3 Credit Hours.**
Prerequisites: Consent of faculty advisor for internships and the Graduate Advisor of Record. Student must have a minimum of 40 semester credit hours in the Applied Demography doctoral program. Practical experience in a workplace setting approved by the faculty advisor for internships and the GAR in which classroom knowledge of demographic research, methods, processes, and implications are applied. No more than 3 hours will apply to the Doctoral degree. A research paper under the supervision of assigned faculty is required at the end of the internship. Course Fee: STSP $9.

**DEM 7801. Directed Research. (0-0) 1 Credit Hour.**
Prerequisites: Consent of instructor and a minimum of 40 semester credit hours in the Applied Demography doctoral program. Directed individual reading, discussion, writing, and/or studies of selected topics in the field of demography. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours will apply to the Doctoral degree. Course Fee: STSP $3.

**DEM 7803. Directed Research. (0-0) 3 Credit Hours.**
Prerequisites: Consent of instructor and a minimum of 40 semester credit hours in the Applied Demography doctoral program. Directed individual reading, discussion, writing, and/or studies of selected topics in the field of demography. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours will apply to the Doctoral degree. Course Fee: STSP $3.

**DEM 7811. Doctoral Research. (0-0) 1 Credit Hour.**
Prerequisites: Permission of the Ph.D. Graduate Advisor of Record and dissertation director. Preparation and writing of dissertation proposal. May be repeated for credit, but not more than 6 hours will apply to the Doctoral degree. Course Fee: STSP $3.

**DEM 7813. Doctoral Research. (0-0) 3 Credit Hours.**
Prerequisites: Permission of the Ph.D. Graduate Advisor of Record and dissertation director. Preparation and writing of dissertation proposal. May be repeated for credit, but not more than 6 hours will apply to the Doctoral degree. Course Fee: STSP $9.

**DEM 7816. Doctoral Research. (0-0) 6 Credit Hours.**
Prerequisites: Permission of the Ph.D. Graduate Advisor of Record and dissertation director. Preparation and writing of dissertation proposal. May be repeated for credit, but not more than 6 hours will apply to the Doctoral degree. Course Fee: STSP $18.

**DEM 7901. Special Topics. (1-0) 1 Credit Hour.**
Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. May be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, will apply to the Doctoral degree in Applied Demography. Course Fee: STSP $3.
DEM 7902. Special Topics. (2-0) 2 Credit Hours.
Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. May be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, will apply to the Doctoral degree in Applied Demography. Course Fee: STSP $6.

DEM 7903. Special Topics. (3-0) 3 Credit Hours.
Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. May be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, will apply to the Doctoral degree in Applied Demography. Course Fee: STSP $9.

DEM 7911. Doctoral Dissertation. (0-0) 1 Credit Hour.
Prerequisite: Admission to Candidacy for the Doctoral degree in Applied Demography. May be repeated for credit, but not more than 12 hours may be applied to the Doctoral degree. Course Fee: STSP $3.

DEM 7913. Doctoral Dissertation. (0-0) 3 Credit Hours.
Prerequisite: Admission to Candidacy for the Doctoral degree in Applied Demography. May be repeated for credit, but not more than 12 hours may be applied to the Doctoral degree. Course Fee: STSP $9.

DEM 7916. Doctoral Dissertation. (0-0) 6 Credit Hours.
Prerequisite: Admission to Candidacy for the Doctoral degree in Applied Demography. May be repeated for credit, but not more than 12 hours may be applied to the Doctoral degree. Course Fee: STSP $18.