Geographic Information Systems, P.S.M.

COLLEGE OF LIBERAL ARTS (http://www.cla.temple.edu)

About the Program
The Department of Geography and Urban Studies offers graduate work leading to the Professional Science Master's (P.S.M.) degree in Geographic Information Systems (GIS). The program combines advanced training in GIS in core and high-demand GIS skills with professional development to prepare students to enter the GIS workforce. The program curriculum, which is informed by an advisory board of industry professionals, incorporates real-world experiences through project-based learning and an internship capstone requirement. Graduates will be well prepared to pursue certification as a GIS professional (GISP).

Time Limit for Degree Completion: 3 years

Campus Location: Main

Full-Time/Part-Time Status: Students complete the degree program through classes offered after 4:30 p.m. The degree program can be completed on a full- or part-time basis. Full-time students can complete the program in one calendar year. Part-time students are expected to complete the program in 3 years.

Affiliation(s): The program is an affiliated Professional Science Master's program.

Areas of Specialization: The program specializes in Geographic Information Systems and offers coursework in Cartography, GIS Application Development, Spatial Database Development, Spatial Statistics, Web and Mobile GIS, and several applied areas. The Department offers students the opportunity to learn in research laboratory settings equipped with the latest technologies.

Job Prospects: The program will train a workforce that is highly competent to meet the challenges faced by public, regulated, and private sector industries and also adaptable to the future needs of the industries. It provides access to a professional career, requiring both technical skills and professional development training in areas related to business, policy, and ethics. The program will enable students to match their specialized training in GIS with substantive fields that utilize such training, including criminology, epidemiology, national security, urban and regional planning, and the natural and environmental sciences.

Non-Matriculated Student Policy: Non-matriculated students may take up to 9 credits prior to matriculation. If accepted into the program, these credits may be applied toward the degree.

Funding Opportunities: Typically, the Department does not provide financial assistance to students at the master's level. Teaching and Research Assistantships are reserved for Ph.D. students.

Admission Requirements and Deadlines
The new P.S.M. in Geographic Information Systems will be offered beginning Fall 2015.

Application Deadline:
Fall: August 1 for Fall 2015; March 1 for Fall 2016 and beyond
Spring: November 1

Full-time students intending to complete the program in a single year are expected to matriculate in the Fall term. Students planning to complete the program part-time may matriculate in Fall or Spring. Late applications may be considered for admission.

APPLY ONLINE to this graduate program.

Letters of Reference:

Number Required: 3

From Whom: Letters of recommendation should be obtained from college/university faculty members or professional references familiar with the applicant's academic competence. The recommendations may be submitted on the "Reference Report for Graduate Study," found at http://www.temple.edu/grad/admissions/documents/Web_GRAD_REFERENCE_REPORT.pdf, or as a traditional letter of recommendation. If the latter, the letters can be sent either electronically or in hard copy to the Admissions Coordinator. If sent electronically, letters must be signed and attached as a PDF on official letterhead.

Coursework Required for Admission Consideration: No specific coursework is required as applicants are drawn from a variety of disciplines.
**Bachelor's Degree in Discipline/Related Discipline:** A baccalaureate degree in any field is appropriate. An undergraduate GPA of 3.0 or an undergraduate GPA of 2.5 with 2 to 4 years of relevant professional experience is preferred.

**Statement of Goals:** Approximately 500-1,000 words include why you are interested in this program; your research and academic goals; your future career goals; your academic and research achievements; and any other information that you believe will be helpful in evaluating your application.

**Standardized Test Scores:**

TOEFL: 88 iBT or 575 PBT minimum

**Resume:** Current resume required. Resumes can be submitted electronically to the Admissions Coordinator.

**Transfer Credit:** Graduate credits from an accredited institution may be transferred into the GIS program. The credits must be equivalent to coursework offered at Temple. In addition, at least half of the grades to be transferred must be an "A" in order to transfer and a grade below "B" is not acceptable. Ordinarily, the transfer credits should have been earned no more than five years prior to the student's matriculation at Temple. The maximum number of credits a student may transfer is 6.

**Program Requirements**

**General Program Requirements:**

**Number of Didactic Credits Required Beyond the Baccalaureate:** 30

**Required Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUS 5061</td>
<td>Cartographic Production</td>
<td>3</td>
</tr>
<tr>
<td>GUS 5062</td>
<td>Geographical Information Systems I</td>
<td>3</td>
</tr>
<tr>
<td>GUS 5162</td>
<td>Advanced Statistics for Urban Applications</td>
<td>3</td>
</tr>
<tr>
<td>GUS 8066</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GUS 8067</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GUS 8069</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>GUS 9187</td>
<td>GIS Capstone</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives:**

Select three electives from a departmental list.

**Total Credit Hours:**

30

**Culminating Events:**

**GIS Capstone:**

The GIS Capstone course (GUS 9187) provides an experiential and industry-relevant learning experience for students matriculated in the GIS Professional Science Master's program at Temple. Students engage in a structured internship experience (140 hours during the term) identified with the guidance of P.S.M. faculty at Temple and a prospective employer. The student completes a GIS-oriented project during the internship that draws on the GIS science and professional skills developed through the P.S.M. curriculum.

**Contacts**

**Program Web Address:**

http://www.cla.temple.edu/gus/graduate/

**Department Information:**

Dept. of Geography and Urban Studies
308 Gladfelter Hall
1115 Polett Walk
Philadelphia, PA 19122-6089
tcousin@temple.edu
215-204-7692

**Mailing Address for Application Materials:**

GIS P.S.M. Program
309 Gladfelter Hall (025-27)
1115 Polett Walk
Courses

GUS 5000. Special Topic Seminars. 3 Credit Hours.
A faculty member offers special seminars in a research specialty. Recent topics have included current perspectives on development, the information and technology needs of low resource community organizations, and information systems design and management.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 5010. Special Topics in GUS. 3 Credit Hours.
Variable content; see graduate chair for specific details.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 5014. Urban Social Geography. 3 Credit Hours.
The course acquaints students with social and cultural understandings of urban space in the U.S. city. Students are asked to use photography to explore how geography grounds itself on the landscape.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5015. Land Use Planning. 3 Credit Hours.
This course is an examination of the forces that influence land use planning in and around American metropolitan regions. It considers economic perspectives (land values); public interest perspectives (zoning subdivision, housing and building codes, redevelopment and renewal programs, etc.); and social perspectives of land use. Also examined are separate housing, commercial locations, and industrial development.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5018. Economic Development and Planning Cities. 3 Credit Hours.
The focus is on the causes of economic decline in American cities, history of governmental policies to promote urban economic development, and major tools available to local economic planners, with special emphasis on the political issues of who controls the programs and who reaps the benefits.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5021. International Urbanization. 3 Credit Hours.
This course examines urbanization around the world. The focus may include issues of rapidly industrializing areas, as well as postcolonial and transition societies. Students address topics related to the effects of rapid social and spatial change in a variety of settings. They also examine the problems of providing housing and urban infrastructure in rapidly urbanizing areas, as well as the social and cultural tensions related to urban change.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.
GUS 5044. Urban Housing. 3 Credit Hours.
An overview of the economic, social, physical, and political forces that have molded the present urban housing stock is provided. Also examined are the implications of present urban housing stock, implications of present trends for the future, and the development of rational housing policies, emphasizing the Philadelphia metropolitan area.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5056. Political Ecology. 3 Credit Hours.
Political ecology is an integrated, interdisciplinary approach to the study of human-nature relations. This course examines resource use, the construction of landscapes, questions of structure-agency, and definitions of "nature" and "development." We study cases at a variety of spatial scales and settings, and include examples from industrialized countries as well as non-industrialized regions. Topics are diverse, ranging from subsistence fishing to access to green spaces in cities. The critical roles of the state, non-governmental organizations, and individual actors in shaping social, political, and economic landscapes are considered.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5061. Cartographic Production. 3 Credit Hours.
This course presents advanced approaches to design and production of thematic maps.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5062. Geographical Information Systems I. 3 Credit Hours.
This course prepares students with the knowledge necessary to effectively use GIS software packages, and covers fundamental principles such as spatial data models, database management systems, network modeling and geo-coding, and basic vector and raster operations.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5065. Geographical Information Systems II. 3 Credit Hours.
Assuming basic familiarity with Geographic Information Systems, this course focuses on applying GIS techniques to the study of such processes as urban sprawl, socioeconomic change, and ecological functioning of urban regions.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits
Pre-requisites: GUS 5062 May not be taken concurrently.

GUS 5068. Census Analysis with Geographical Information Systems. 3 Credit Hours.
Students gain an understanding of U.S. census geography and tabular data through the use of GIS. Activities, discussions, and lectures familiarize students with U.S. Census Bureau data, while lab assignments and exercises provide experience using GIS to analyze real world problems. By the end of the semester, students will have learned a variety of advanced GIS techniques and be able to make effective use of census data for academic research.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5071. Medical Geography. 3 Credit Hours.
This course offers an analysis of the factors responsible for the geographic patterns of disease, mortality, and health care services: the role of the environment in evaluating mortality and disease patterns.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5075. Regional Development. 3 Credit Hours.
This course examines the transformations, beginning with the European expansion 500 years ago, that have, to a large extent, created the regional variation we see today. Theoretical approaches to understanding "modernization" and "development" are considered. This foundation is then built on to look at the historic factors that have shaped different parts of the world. Examined are the political, economic, social, spatial, and environmental processes that have shaped those countries that share a colonial past (our primary focus) as well as North America, Asia, Japan, and Eastern Europe.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5096. Problems in Environmental Quality. 3 Credit Hours.
Local urban environmental problems are considered by members of the class in research teams, with a view toward seeking possible solutions.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.
GUS 5097. Race, Class, Gender in Cities. 3 Credit Hours.
This research seminar examines the spatial dimensions of metropolitan inequality, focusing on how inequality is perpetuated along race, class, and gender lines. Topics include urban growth politics, zoning and land use planning, domestic architecture, racial segregation, poverty, and homelessness. Students design a research proposal based on course materials.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5159. Geographic Inquiry. 3 Credit Hours.
This course familiarizes students with the theoretical, conceptual, and methodological debates underlying the use of spatial analysis in the social sciences. Students explore how place, space, and scale are conceptualized and utilized to examine urban processes as well as different approaches to spatial representation, including visual, mathematical, digital, and cognitive.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5161. Statistics for Urban Spatial Analysis. 3 Credit Hours.
This course provides an introduction to statistical analysis of spatial phenomena and processes with an emphasis on urban applications using a variety of economic, demographic, health, crime, and environmental data sets. The course covers the basic principles of sampling, probability, and tests of significance; spatial exploratory data analysis (SEDA); measures of association; ordinary least squares regression; and factor, principal component, and cluster analysis.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5162. Advanced Statistics for Urban Applications. 3 Credit Hours.
This course teaches advanced statistical methods to examine urban processes and patterns. The course covers spatial point pattern analysis, multivariate regression, logit and probit regression, spatial econometrics, Geographically Weighted Regression (GWR), and hierarchical linear modeling.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits
Pre-requisites:
GUS 5161|May not be taken concurrently.

GUS 5163. Qualitative Methods. 3 Credit Hours.
This course is designed to foster an understanding of the principles and appropriate application of qualitative methods in Urban Studies. It provides an overview of qualitative research design and emphasizes the connections between grounded theory, explorative inquiry, and thick description. Specific skills that are introduced include participant observation, in-depth and open-ended interviewing, oral histories, case study analysis, focus groups, narrative analysis, content analysis, archival analysis, and social action methods. The course examines the limitations and advantages of qualitative approaches, triangulation with quantitative methods, and ethical issues in conducting research.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5165. Community Based Program Evaluation. 3 Credit Hours.
The course focuses on how to design and conduct evaluation plans that are useful for improving community-based human service and educational programs, as well as the challenges encountered in conducting evaluations in real world settings. A major emphasis is on the various methods and issues involved in conceptualizing, planning, conducting, and utilizing program evaluations. Among the topics covered are logic models and program theory, evaluability assessment, needs assessment, and process and outcome evaluation design.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5304. Food Studies. 3 Credit Hours.
This course introduces students to key issues in food systems from a geographical and environmental perspective. The course begins with an overview of what constitutes a food system and critically examines agricultural transitions that took place over the last century, including the erasure of nondominant rural imaginaries. After, the course turns to look at issues of food security, access and control, focusing our attention to the question of how to produce more just food systems. We end with an exploration in critical nutrition and food-body relationships.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 5307. Transportation and Culture. 3 Credit Hours.
Students will learn to approach the modern geography of transportative possibility from a critical standpoint. Rather than accepting this contemporary geography as being the outcome of supposedly “superior” transport technologies’ rendering marginalized technologies obsolete, students will examine how processes of cultural and political struggle have shaped, opened up, and in some cases limited the modern array of possibilities for human mobility. Waterborne, animal-based, and human-powered modes of transportation will receive special attention, as will ongoing debates and struggles over automobile planning and urban mass transit. The history of transportation will be presented as necessarily entangled with parallel histories of public protest, political struggle, emergency logistics, human-animal relations, and environmental geography. The course readings will look at many parts of the world.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.
GUS 8006. Geographic Thought. 3 Credit Hours.
This course reviews current concepts and methods used in geographic and urban interdisciplinary research. The major goals are to have students trace the pedigree of their research interests and develop a bibliography of essential readings.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8010. Geographic Inquiry. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8011. History and Theory of Urban Studies. 3 Credit Hours.
This course provides students with the foundational knowledge to pursue graduate studies in the interdisciplinary field of Urban Studies. It surveys the historical and philosophical bases of contemporary urban studies and provides an introduction to contemporary explanatory frameworks and associated critiques in the social sciences.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8016. Public Policy for Urban Regions. 3 Credit Hours.
This course introduces students to the major policy approaches used to sustain and develop cities and regions in the United States and beyond - i.e., direct government intervention, market models, and third sector institutions. The course examines the changes brought about by globalization in the scope and function of governments, including regulatory regimes and privatization of services and infrastructure. Students analyze the consequences of different policy approaches for social equity, environmental sustainability, and economic growth.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8021. Geography of Urban Services. 3 Credit Hours.
The course provides an analysis of concepts basic to understanding spatial service patterns and emphasizes use of models in service area delineation.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8031. Critical Issues in Globalization, Sustainability, and Social Justice. 3 Credit Hours.
This course explores the theories, facts, and debates related to globalization, sustainability, and social justice, the themes that are critical to understanding contemporary urban conditions and dynamics. It provides students with an overview of a wide range of issues, in a number of U.S. and international settings, and at several spatial scales. The material is foundational for making decisions on research topics.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8033. Urban Economic and Spatial Structure. 3 Credit Hours.
This course provides an introduction to the analysis of urban economic and spatial structure. Key ideas from urban economic theory (comparative advantage, scale economies, location economies, urbanization economies, clustering, increasing returns) are introduced. They are combined with key ideas from trade theory (transportation cost and globalization) and the impact of federal, state, and local government policies on creating and changing internal structures of cities and their consequences for access and distribution in fragmented metropolises.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8043. Seminar on Homelessness in America. 3 Credit Hours.
This course explores various issues relating to homelessness, with a focus on public policy and research. A dominant theme is how public policy decisions have contributed to this problem. Topics are the experience of being homeless, the epidemiology of homelessness, structural and individual theories of homelessness, the history of homelessness in the United States, substance abuse and mental illness among the homeless, homeless women and children, homelessness in Philadelphia, and public policies needed to address the problem.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8045. Poverty and Employment. 3 Credit Hours.
The course examines the relationships among the globalization of the economy, economic restructuring, metropolitan labor markets, and poverty focusing on contemporary U.S. cities. It evaluates theoretical and public policy debates about employment and poverty. Particular attention is paid to how class, gender, and racial inequities are reproduced in the urban economy.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8047. Comparative Urban History. 3 Credit Hours.
The course reviews methodological tools for comparative readings and research on the history of cities, across cultural and chronological boundaries.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.
GUS 8050. Environmental Seminar. 3 Credit Hours.
This course examines the ecological consequences of contemporary economic development. Focus is on countries at the low end of the developmental scale in Latin America, Africa, and South Asia. The course illustrates through case studies how changes in the relations of production give rise to increasing degradation of resources.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 8055. Sustainable Cities. 3 Credit Hours.
This course introduces the concept of sustainability and explores environmental problems linked to urbanization, drawing on historical analysis, social theory, landscape ecology, and city planning/design practice. Primary topics covered include social and economic drivers of urban development and suburban sprawl; the principle of carrying capacity; the measurement of landscape-scale ecological function (e.g., habitat fragmentation); and the use of decision support tools to generate alternative policy scenarios for urban sustainability planning.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8055. Cartographic Design. 3 Credit Hours.
The focus is on practical work with photographic and related processes to produce a map printed in color.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8097. Research Design. 3 Credit Hours.
The goals of this course are to provide students with an understanding of the basic concepts underlying different spatial approaches to research design and analysis. The course emphasizes fundamentals of designing investigations using a variety of methods and data to better understand urban processes, problems, and topics. Students learn to critically evaluate and conduct research, formulate meaningful research questions, design studies using different research methods, and develop a rigorous research proposal.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8113. Community-Based Research. 3 Credit Hours.
This course deals with applied, empirical research experience on issues affecting urban communities in the Philadelphia area. Students conduct research projects in collaboration with local community organizations working for community change. The course includes the study of contemporary urban issues and training in research methods, applied research techniques, report writing, and negotiating client-driven research.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 8985. Teaching in Higher Education: Social Sciences. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits.

GUS 9082. Independent Study: Geography and Urban Studies. 1 to 3 Credit Hour.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 9083. Readings in Geography. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 9085. Internship in Geography and Urban Studies. 3 Credit Hours.
The internship provides on-the-job training for graduate students with local consulting firms, planning commissions, community organizations, and various state, local, and federal government agencies in the Philadelphia metropolitan area.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 9086. Internship Paper. 1 to 6 Credit Hour.
Students complete a summary paper that is based on their experience in the field.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 9087. Mapping Practicum I. 3 Credit Hours.
Students are assigned cartographic projects and encouraged to plan, design, and execute them for faculty and those from outside firms and planning agencies.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.
GUS 9187. GIS Capstone. 3 Credit Hours.
The GIS Capstone course provides an experiential learning experience for students matriculated in the Professional Science Master's in GIS program at Temple. Students engage in a structured internship experience (140 hours during the semester), identified with the guidance of PSM faculty at Temple and a prospective employer. The student will complete a GIS-oriented project during the internship that draws on the GIScience and professional skills developed through the PSM curriculum. Student performance will be evaluated based on three criteria: 1) employer report of student performance during the internship, 2) student presentation of project, and 3) student-submitted report of project. The projects will be presented to PSM faculty and students at the conclusion of the semester and reports will be made available to employers and members of the Advisory Board. This course is required for all students matriculated in the GIS PSM at Temple. Students are expected to complete 140 hours of internship experience during the semester and to participate in an online course to reflect on their experiences during the internship. Students MUST have their internship opportunity approved by the instructor prior to the start of the semester.

Department restrictions: Must be enrolled in one of the following Departments: CLA:Geography & Urban Stdies
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may not be repeated for additional credits
Pre-requisites:
GUS 5062|Minimum Grade of B-|May not be taken concurrently.

GUS 9991. Master's Research Paper. 3 Credit Hours.
Students develop a high-quality research paper on a topic of their choice. Students connect the development of their paper to their work within a specific course as a means of facilitating their project. Students also work with an individual advisor to develop the content, implement the project design, and approve the final paper.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 9994. Doctoral Qualifying Examination. 1 Credit Hour.
Preparation for the preliminary examination.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 9996. Masters Research. 1 to 6 Credit Hour.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 9998. Dissertation Proposal. 1 to 3 Credit Hour.
Preparation of the dissertation proposal in consultation with the primary dissertation supervisor.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Repeatability: This course may be repeated for additional credit.

GUS 9999. Dissertation Research. 1 to 6 Credit Hour.
After passing the Qualifying Exam, continuous registration in 9999 during the Fall and Spring semesters is required until the dissertation is successfully defended. One credit is the minimum required each semester after the proposal defense and while the student is researching and writing the dissertation. A minimum of 6 s.h. of GUS 9999 must be taken before one can secure the Ph.D. degree.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate
Student Attribute restrictions: Must be enrolled in one of the following Student Attributes: Dissertation Writing Student
Repeatability: This course may be repeated for additional credit.