GRADUATE HANDBOOK

M.A. and Ph.D. Degrees

DEPARTMENT OF GEOGRAPHY AND URBAN STUDIES

COLLEGE OF LIBERAL ARTS

TEMPLE UNIVERSITY

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Welcome to the graduate program of the department of Geography and Urban Studies (GUS). The department offers four graduate degrees and two graduate certificates:

- PSM in Geospatial Data Science
- PSM in GIS
- MA in Geography
- Ph.D. in Geography
- Certificate in GIS
- Certificate in Geospatial Data Science

This Handbook is designed for prospective and current students in the MA and Ph.D. programs. Prospective students can learn how to apply for admission and financial aid, and along with current students, understand the rules of the department, the college, and the university and the resources available for graduate education. The Handbook will help you plan and undertake your individual program of courses and other requirements. Our goal is to provide clarity on how to get admission to the program and progress through it to a graduate degree while meeting the standards of our institution.

Some of the rules are department specific, and this Handbook is your best source for this information. Other rules emanate from the College of Liberal Arts (CLA), where the department is located, or the Graduate School, which is the body that guides all graduate education at Temple University, all its colleges and departments. This Handbook is also a good source for learning about CLA and Graduate School rules. The relevant matter is included in the text, and hyperlinks guide you to the original material, so that you can keep up with changes as soon as they are instituted at other levels.

The Department

The complex challenges and opportunities of the 21st Century will require synthesis of multiple perspectives and expertise. The graduate program of the department of Geography and Urban Studies focuses on the themes of *globalization*, *sustainability*, *social justice*, and *geographical methods*—four broad areas of inquiry are central to understanding such challenges and opportunities. The complexity and pace of economic, environmental, and social change requires that students are trained in interdisciplinary and spatially integrative analytical frameworks and specialized skills to apply to real-world conditions. Therefore, our curriculum emphasizes theory, applied research, and a range of spatial analytical methods including quantitative (emphasizing Geographic Information Science or GIS) and qualitative techniques.

The curricula for both the MA and Ph.D. programs are built on the faculty's research and pedagogical strengths and represent cutting-edge approaches to geographic analysis. Our faculty excel at theoretical and applied analysis of both urban and rural areas within their broader regional, national, and global contexts. Through course work, research experiences, and mentorship, we train our graduate students to conduct theoretically-informed and empirically-grounded research in urban and rural settings (US and international); understand spatially integrated, interdisciplinary analyses of complex urban/rural processes and problems; and, specialize in techniques for analysis with an emphasis on GIS, spatial statistics, and qualitative methods. Furthermore, students utilize our faculty's linkages with public agencies, educational institutions, community-based organizations,

non-governmental organizations, and social movements in our region, many other regions in the US, and several significant international locations. There are rich geographical, urban, and rural resources located in other units of Temple University, and our program makes full use of those resources, especially by drawing on the expertise of graduate faculty conducting research and teaching courses in related areas in the College of Liberal Arts and across the University. Finally, the complex Philadelphia metropolitan region is a mirror and a setting for continuous engagement with critical urban and regional issues.

Our doctoral students are prepared for careers in institutions of higher education (in geography, urban planning, and policy studies departments, and interdisciplinary international / environmental / development programs) and research-oriented organizations (think-tanks, policy institutes, non-governmental organizations). Our MA students are prepared for further graduate education as well as professional positions related to economic and community development, environmental sustainability, and social justice. Potential placements include local and governmental agencies, non-governmental organizations at the local and international scale, community-based and public interest advocacy organizations, and business.

Application and Admission

Applications are reviewed by the Graduate Chair and the Graduate Committee in the Geography and Urban Studies Department in conformity with the requirements established by Temple University's Graduate School and as described in the Graduate School's online *Policies and Procedures* at https://grad.temple.edu/resources/policies-procedures

Also, for up-to-date requirements,
Ph.D. applicants see https://bulletin.temple.edu/graduate/scd/cla/geography-phd/
MA applicants see https://bulletin.temple.edu/graduate/scd/cla/geography-ma/

Admission Standards

Decisions on admission are taken by the Graduate Director and the Graduate Committee of GUS.

Ideally, students entering the M.A. and Ph.D. programs must meet the following standards:

- Degrees needed:
    - MA admission: A baccalaureate degree in any of the social sciences is appropriate. A bachelor's degree in another discipline may also be considered.
    - Ph.D. admission: A baccalaureate degree is required. It should have been earned in Geography, Urban Studies, a cognate social science, or related field. A master's degree is recommended but not required.

- The minimum admission standard for all graduate students is an undergraduate grade point average of "B" or 3.0, or the functional equivalent for students who have attended universities outside the United States. The Dean of the Graduate School considers exceptions to the admissions requirement if the student meets one of these criteria:

- Achieved a 3.25 cumulative grade point average in at least 9 credits of graduate work at an accredited university in the United States or equivalent academic performance in a university outside the United States.
- Scored above the 65th percentile on the verbal and quantitative portions of the GRE.
- Earned a 3.5 grade point average during her/his final two years of undergraduate work.

- Minimum English Language Requirements: An applicant who does not hold a baccalaureate degree from an institution in which the sole language of instruction is English is required to pass the **Test of English as a Foreign Language** (TOEFL) with a minimum score of 79 on the internet-based (IBT) version, or of 9.0 on TOEFL essentials. The Graduate School also accepts the Pearson Test of Academic English with a minimum score of 53, the IELTS with a minimum score of 6.5, or the new Duolingo score report with a minimum score of 110. (International students please check the Temple Graduate Admissions website to see if any special admissions requirements pertain to you: https://grad.temple.edu/admissions/international-applicants/before-you-apply)

- Letters of recommendation (at least three), which should be obtained from college/university faculty members familiar with the applicant's academic competence.

- A Statement of Goals which should be approximately 500-1,000 words and include the following elements: why you are interested in Temple's Geography and Urban Studies 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 to the Admissions Committee in evaluating your application. The Graduate Committee is particularly interested in students' interests and goals and whether they fit with our program offerings and faculty interests.

- A resume or CV.

- The Graduate Committee may request a writing sample at its discretion.

Students should begin the application process well in advance of the anticipated matriculation date. Applicants should complete their applications by January 15th (including reporting, where applicable, the TOEFL or English language test scores) prior to the fall semester in which they would enroll. Students who fail to meet the January 15th deadline will generally not be considered for funding. Normally it takes a few weeks to obtain transcripts and recommendations.

The Graduate Committee generally reviews applications and makes decisions within eight weeks of receiving all the necessary documents. Department funding decisions are typically made by March 15. Applicants can check with the Graduate Coordinator to ascertain whether their files are complete.

International Students

For international students, an additional month or two is required to evaluate non-U.S. transcripts. It is helpful for applicants to send in a completed application package, including sealed transcripts and recommendations. The department strongly recommends that international applicants have their academic credentials evaluated by a professional credentialing service listed on the National Association of Credential Evaluation Services (NACES; www.naces.org/members.htm). The Graduate School does not require additional in-house evaluation of credentials that have been evaluated by the credentialing services listed on the NACES website. International applicants should consult the Graduate School website https://grad.temple.edu/admissions/international-applicants for more information about the documentation required by them.

Non-Matriculated Students

Prior to applying for admission, students sometimes seek to take courses as non-matriculated students. Students who wish to do so must apply for admission at the School of Continuing Education and must get the approval of the GUS Graduate Director before enrolling in courses. Students will be asked to submit grade transcripts from where they received their undergraduate degree and wherever they might have attended graduate school in the past.

Transfer Credits

For students starting the M.A. program, a maximum of 6 graduate credits from an accredited institution may be transferred into the Geography program. The credits must be equivalent to coursework offered at Temple. In addition, at least half of the grades to be transferred must be A's 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.

For students entering the Ph.D. program, graduate coursework taken at an accredited institution as part of a master's degree program prior to matriculation at Temple may be accepted for Advanced Standing Credit. An applicant must supply an official transcript from their prior graduate institution to the Graduate Director. The Graduate Committee will review the request. Only grades of B or better will be accepted. If the request is granted, the student receives advanced standing and is awarded a maximum of 24 credits. Normally, these credits should have been earned no more than five years prior to the student's matriculation at Temple.

Transfer credit is not automatically granted. After completing 12 semester hours, students must file a written request for transfer credit. This request is then reviewed by both the Geography and Urban Studies Department and the Graduate School.

An applicant who has taken Geography and Urban Studies courses as a non-matriculated student at Temple University can apply up to 9 semester hours toward the M.A. or Ph.D. course requirements, as long as the courses taken satisfy the degree requirements. Students considering applying to the M.A. or Ph.D. program while taking courses as a non-matriculated student should discuss their plans with the Graduate Director. Students should apply for transfer credit no later than having completed 6 semester hours as a non-matriculated student.

University rules restrict double counting of course credits for two degrees. Additionally, students may not be matriculated into more than one degree program at a time.

Costs and Financial Support

Costs

Please consult the Graduate School website for the latest schedule of tuition and fees. Go to www.temple.edu/grad/admissions/tuition_fees.htm

Departmental Support

The department of Geography and Urban Studies typically supports graduate students as Teaching or Research Assistants. Most of the funding available is in the form of Teaching Assistantships awarded by the Department. Students may not only assist professors in research and teaching but may, when they are sufficiently advanced in their coursework, teach courses on their own. Assistantships include full tuition, a stipend, and health insurance. (The amount of the stipend varies from year to year. Information on the amount for the current year is available from the Graduate Director.) Assistantships are awarded on a competitive basis. Assisting in research and undergraduate teaching helps graduate students integrate their studies and prepare for examinations and provides valuable experience to those who plan on pursuing an academic career.

In making funding awards, the Graduate Committee places high priority on a student's academic performance and potential. The following rules and criteria guide the committee's decisions for continuing students on financial aid:

- Students must be making normal progress toward meeting their degree requirements, including maintaining a minimum GPA of 3.25.
- Two incompletes disqualify a student from consideration for financial assistance. Advanced students should note that no student will be awarded financial assistance who has not successfully defended a dissertation prospectus within a year of passing the comprehensive examinations.
- To spread support more broadly and to provide an incentive for students to move quickly through course work and examinations and into the dissertation, the department typically will not provide financial aid for students who have already had five years of support as a Graduate Assistant.

Foreign students seeking support as teaching assistants should note that students whose native language is not English must pass a special test for Competency for Non-native Speakers of English in Instructional Capacity before they can assume any teaching-related positions.

Graduate School Support

The Graduate School offers University Fellowships to the very best applicants on a competitive basis for newly and recently admitted Ph.D. students. The department nominates students to the

Graduate School for these awards. All application materials for such scholarships, including official report of GRE scores, *must arrive at the department no later than January 15th*. In addition to excellent grades and GRE scores, applicants are expected to have strong letters of recommendation and a strong statement of purpose.

The fellowships available for CLA graduate students include:

- *University Fellowships* (for doctoral students not yet enrolled at Temple, as well as Temple graduate students who have not earned more than 24 graduate credits): at least $34,000 and tuition, for up to two years, plus up to three additional years of support as teaching assistant and/or research assistant.

In addition to these programs, the university has a *Future Faculty Fellowship Program* for students who intend to become college teachers. The program provides summer research stipends to selected students with departmental funding. Nominees to this program must be U.S. citizens or permanent residents. Applicants interested in this program should craft their statements of purpose carefully, emphasizing both eligibility under one of the criteria below and their commitment to a career in higher education. The following factors are considered in evaluating nominees**:**

- membership in an ethnic or gender group which is underrepresented in the nominee's discipline;
- record of exceptional and continuous leadership ability in substantial college or community activities;
- likelihood of successfully completing a terminal degree program; and
- exceptional circumstances or significant obstacles that a nominee has overcome in preparation for his or her education.

For students nearing completion of their dissertations, the Graduate School offers a limited number of *Final Year Doctoral Dissertation Completion Grants.* Doctoral candidates with approximately 6 months of anticipated writing to complete their dissertations may apply for this grant. These awards are given on a competitive basis. Students should apply for these awards only when all other department and university support have been exhausted, and when a persuasive case can be made that the dissertation will be completed within the time period of the grant. No more aid will be available after the awarding of such a grant. Interested students should speak to the Graduate Director at least one term before they plan to apply for the award. Applications can be made in the Spring or Fall semester.

Other Financial Support

The Office of Student Financial Services (215.204.2244) can advise students about federal and state loan programs.

Temple University maintains a centralized job listing of work-study jobs on the university campus. Students can reach the link via the TUPortal. Select Student Links, and the link is listed. To find a

listing of work-study positions off-campus, consult https://sfs.temple.edu/financial-aid-types/federal-work-study/campus-federal-work-study-job-bank

The following offices provide information on graduate student employment opportunities at Temple University. Some of these are hourly jobs, others provide stipends (sometimes with tuition remission and benefits as well). A student who did not receive departmental financial aid is encouraged to contact these offices as soon as possible:

- Student Financial Services, ground floor Conwell/Carnell Hall. https://sfs.temple.edu
- Charles Library, Personnel Office www.library.temple.edu
- Institute for Survey Research, 312 Anderson Hall https://liberalarts.temple.edu/research/labs-centers-and-institutes/institute-survey-research/resources
- Institutional Research and Assessment, 300 Sullivan Hall https://ira.temple.edu
- Graduate School, 501 Carnell Hall https://www.temple.edu/grad/finances/index.htm
- Temple Writing Center https://studentsuccess.temple.edu/programs/writing

Residence assistantships; See Director of Residences
http://housing.temple.edu/about/employment

Degree Requirements for the MA

Credits: **30**
Core courses
GUS 5159 Geographic Inquiry **(3 credits)**
GUS 8016 Public Policy for Urban Regions OR GUS 5041 Sustainable Natural-Human Systems **(3 credits)**
GUS 5062 Fundamentals of Geographical Information Systems **(3 credits)** OR **(3 credits):** GUS 5031 GIS Programming GUS 5032 Geosimulation GUS 5063 Remote Sensing GUS 5065 Urban Geographical Information Systems GUS 5066 Environmental Applications of GIS GUS 5067 GIS and Location Analysis GUS 5068 Census Analysis with Geographical Information Systems GUS 5069 GIS for Health Data Analysis GUS 5072 Advanced Remote Sensing GUS 5161 Statistics for Urban Spatial Analysis
Methods courses (6 credits)
Electives (12 credits)

GUS 9085 Internship *or* GUS 8097 Research Design (with permission of chair) (3 credits)
Total credits: 30

Advising

The Graduate Director assigns students to an initial advisor based on area of interest and workload distribution. The Graduate Advisor must be a GUS faculty member. The advisor holds a required meeting with incoming students at the end of their first semester in the program to give them a chance to discuss any problems and to ensure that they are making good progress.

The Graduate Advisor helps determine the student's schedule of classes each semester, answers general questions about the program, and helps the student define his/her research orientation. Students may change from their initially assigned advisor to another faculty member at any time during the program, subject to approval by the Graduate Director.

Annual Review

All MA students undergo annual evaluation by the Graduate Director of the Department in consultation with the faculty member serving as the student's advisor. The evaluation is to determine the student's readiness to continue in the program. The evaluation takes place at the end of the spring semester after grades are due. The evaluation includes inspection of the transcript and commentary by the student's advisor and relevant instructors. Students will be evaluated based on the following criteria:

- Completion of courses in our curriculum with a grade of B or higher.
- Following advisor and committee recommendations on meeting degree requirements.
- Advisor feels the student is making adequate progress toward meeting degree requirements.

The possible outcomes of this review are:

1. PASS (student continues with the normal next year of the program);
2. FAIL (student is recommended for academic dismissal); or
3. PROBATION (student is counseled to take specific courses or other actions to achieve the necessary readiness to continue in the program). In the case of a recommendation of Probation, the student will be re-evaluated after an additional semester. If this second review does not result in a decision to PASS, the student is recommended for academic dismissal.

Sample Programs of Study

Students entering the program with a BA regardless of whether they are pursuing a terminal MA or the doctoral program will complete the MA program. Students pursuing a terminal MA may enter the program part-time. For sample programs of study for students entering the program by different routes, see Appendix B.

Degree Requirements for the Ph.D.

57 Credits Total

Prior to 2022, 36 Credits from GUS MA program may be transferred to fulfill requirements below.

After 2022, 30 Credits from GUS MA program may be transferred to fulfill requirements below.

Or up to 24 credits from another MA program may be approved for *advanced standing*.

Core Courses (3 credits) The following core course must be taken by every Ph.D. student.

Geographic Inquiry (3)

Two Methods Courses (6 credits): Students are required to take two out of the ten methods courses listed below. The intention of the core methodology course requirement is to ground students in multiple qualitative or quantitative methodologies. Thus, all students gain basic knowledge of at least two out of three methodological approaches: qualitative methods, statistical analysis, and GIS, with the choice of whether to focus more heavily on qualitative (i.e. qualitative methods and program evaluation) or quantitative (i.e. statistics and GIS) approaches. Note that students are free to take additional methods courses as part of their elective course load, if they choose to focus more deeply on a particular methodological set.

Statistics for Urban Spatial Analysis (3)

Qualitative Methods (3)

Fundamentals of GIS (3)

Urban GIS (3) (prereq: Fundamentals of GIS)

Environmental GIS (3) (prereq: Fundamentals of GIS)

GIS for Health Data Analysis (prereq: Fundamentals of GIS)

Cartographic Production (3)

Cartographic Design (3)

Community Based Program Evaluation (3)

Advanced Statistics for Urban Applications (3) (prereq: Statistics for Urban Spatial Analysis or equivalent)

Additional courses may be approved at the discretion of the Graduate Director.

Electives

Students get specialized training through their selection of at least 39 credits of coursework (13 courses) from an elective menu of graduate courses (see Appendix A). Students work closely with their advisor to choose their advanced courses. Students are also able to take courses across the university with the permission of their advisor.

In the last year of coursework, PhD students should take GUS 8097 Research Design (3), to prepare them for writing their proposal.

Non-Didactic Units (e.g. non-instructional credits)

Qualifying Exams (1 credit)

Dissertation Proposal Defense (1 credits)

Dissertation Research (4 credits) and Defense

Qualifying Exams

The qualifying exams are taken after all coursework is complete. Normally the exams should be completed no later than 6 months after coursework is complete.

In conjunction with their Graduate Advisor (who must be a member of the GUS Department faculty), the student identifies at least two other faculty members of the exam committee. The two additional members may be GUS Faculty or another faculty member at Temple approved by the Graduate Chair. At least two of the committee members must be from GUS.

The exams have a written and oral component. Students develop one major field and two minor fields. The major field should include a subfield (e.g. economic geography) in breadth and depth. The first minor should include a subfield (e.g. urban sustainability) in breadth. The third subfield should be a specialized field that reflects the student's area of expertise (i.e. the reading list could look similar to the bibliography of the dissertation). The fields should incorporate theory, policy and methods in the fields of study. Students develop the parameters of the exams with their committee.

The written portion of the Qualifying Examination is used to assess the student's knowledge of the field and problem-solving abilities in the context of urban research. The committee approves reading lists for the student to prepare for the exam. Several different written examination formats are possible, at the discretion of the committee. These may include a single extended research problem prepared by the entire committee, individual papers prepared for separate examiners, or an alternate format approved in advance by the chair of the committee and the Graduate Director. Either a "closed book" three hour exam for each written paper or 5-7 days for an "open book" exam, submitted via e-mail or hard copy, can be considered. Alternate arrangements should be discussed with the Graduate Chair and approved before the start of the exam.

The oral portion of the Qualifying Examination is administered no later than two weeks after successful completion of the written portion. The oral portion of the examination may expand on the questions asked on the written exam, may include additional but related questions, and will assess the candidate's readiness to commence dissertation research. The entire qualifying exam is graded on a pass/fail basis. The Graduate Advisor/Chair and all but one of the remaining members of the examination committee must approve in order for the student to pass the qualifying examination. If the student fails the exam, s/he will be given the opportunity to re-take the exam, usually within a semester. If the student fails the second time, s/he will be recommended for academic dismissal.

Once the exam has been passed (1 credit hour), the student achieves candidacy.

Dissertation Proposal, Research and Defense

The Dissertation Committee

The Graduate Advisor (who must be a member of the GUS Department Faculty) helps the student identify two to three additional members of the Dissertation Committee to help the student develop the dissertation. At least three members of the committee must be members of the Temple University Graduate Faculty. At least two committee members, one of whom must be the chair, should be from GUS. The committee may include other Temple University Faculty or faculty from outside Temple; however, at least 50% of the committee members must be from GUS. If a committee member is not a Temple University Graduate Faculty, the chair of the committee must request approval by submitting the Nomination for Service on Doctoral Committee Form.

All committees must adhere to the guidelines set forth by the graduate school on committee composition: http://www.temple.edu/grad/policies/gradpolicies.htm#DD28

Proposal

Within the semester following completion of the qualifying exams, a candidate is expected to submit a 5-6 page preliminary dissertation proposal to the Dissertation Committee. Within one year of passing the exams and prior to beginning work on the dissertation, students are expected to submit a more substantial dissertation proposal to their Dissertation Committee. The proposal defines the research problem, scholarly significance, pertinent literature, and methodology. It should contain an outline of the projected document and a timeline for completion of the various tasks involved in the dissertation. Typically, much of the proposal will be used in the dissertation and/or in a grant proposal.

The Dissertation Committee Chair/Graduate Advisor schedules a meeting of the committee for the proposal defense. The student gives an oral presentation of the proposal and the committee members are expected to ask questions and give suggestions. The oral presentation of the proposal should be public, and all department faculty and students should be invited to attend. Following the oral presentation, the committee convenes a closed session with the student to further discuss the proposal. The committee must approve the proposal and give written, specific instructions on how the student can improve her/his dissertation. The Dissertation Committee Chair/Graduate Advisor sends a letter to the Graduate Director indicating whether the proposal has been accepted (1 credit hr) or rejected and summarizes comments from the overall committee.

Dissertation

The Ph.D. dissertation is expected to make an original contribution to the field of geography and/or urban studies. The dissertation must demonstrate formulation, design, and independent execution of a significant research project. The student must complete a minimum of 4 credit hours of dissertation research. There is no maximum, but students should note that seven years is the limit.

Defense

As the student's field research and dissertation writing gets substantially underway, the Chair of the Dissertation Committee (Graduate Advisor) and other committee members monitor the progress made, and provide clear and timely indications of any reservations they have about the student's progress. When the student and the chair judge the dissertation complete and ready to be defended, the chair schedules the dissertation defense. The dissertation examining committee must include the chair and all members of the doctoral committee AND at least one outside examiner who has not been previously involved with the dissertation development. The student presents a formal lecture at a public defense. Following the public presentation and discussion, the Dissertation Committee convenes with the candidate in a closed session for the defense. Directly after this session, the committee votes whether or not to accept or reject the completed dissertation.

Advising

The Graduate Director assigns each incoming student to a Graduate Advisor based on area of interest and workload distribution. The advisor is a member of the Department of Geography and Urban Studies. The Graduate Advisor helps determine the student's schedule of classes for each semester, answers general questions about the program, helps the student define her/his research orientation, and assists with research skills preparation. For doctoral students, the advisor also serves as the chair of the qualifying exam committee and the dissertation committee and helps the student to form these committees. Depending on a student's evolving interests, it may be necessary for the student to change advisors. Throughout the student's program of study, s/he has a free hand in choosing someone other than the department-assigned advisor. This is normal and has no punitive consequences.

Annual Review

All doctoral students undergo a formal evaluation by the Graduate Faculty in the Department as well as affiliated faculty serving on committees. The evaluation determines the student's readiness to continue in the program. The meeting takes place at the end of the spring semester after grades are due. The evaluation includes inspection of the transcript and commentary by the Graduate Advisor, relevant instructors and relevant committee members. Students will be evaluated based on the following criteria:

- Completion of courses in our curriculum with a grade of B or higher.
- Satisfactorily meeting TA or RA requirements.
- Following advisor and committee recommendations on meeting degree requirements.
- Advisor feels the student is making adequate progress toward meeting degree requirements.
- (1-2nd year students) Taking courses in our curriculum and pursuing other academic endeavors (e.g. conference attendance) that will prepare him/her for a dissertation in GUS.
- Completed and passed comprehensive exams?
- (3--4th year students) Completed and defended dissertation proposal.
- (3--4th year students) Making necessary progress towards the dissertation.
- (3--4th year students) On track to graduate?

The possible outcomes of this review are:

1. PASS (student continues with the normal second year of their program);
2. FAIL (student is recommended for academic dismissal);
3. PROBATION (student is counseled to take specific courses or other actions to achieve the necessary readiness to continue in the program). In the case of a recommendation of Probation, the student is re-evaluated after an additional semester. If this second review does not result in a decision to PASS, the student is recommended for academic dismissal;
4. RECONSIDERATION of financial support from department.

Foreign Language

If appropriate to the proposed area of study, the student's committee may require that s/he acquire the necessary competence in a foreign language. The advisor supervises the completion of this element with input from the university's various language departments that administer examinations for graduate students needing to fulfill language competencies.

Time to completion

Students admitted to the Ph.D. program are normally expected to attend full-time. A doctoral student entering with a BA should complete the Ph.D. in approximately 5 years. A doctoral student entering with a MA in a related field and advanced standing of 24 credits should complete the Ph.D. in approximately 3 years (see Appendix B).

Sample Programs of Study

A student may enter with a BA and be accepted for the Ph.D. program or a student may enter with a MA in a related field and apply for advanced standing up to 24 credits (see Appendix B for sample programs of study for students entering the program by different routes).

General rules and standards

This section is a supplement to, and elaboration of, the policies and procedures of the Graduate School, which can be found on-line at www.temple.edu/grad/policies/index.htm

Full-time status versus part-time status

To be considered full-time, graduate students who are taking courses should be enrolled for at least 9 credits. A graduate student assigned a Teaching Assistantship that requires 20 hours of work per week may be considered to be full-time if s/he is enrolled for at least 6 credits, although most Teaching Assistants enroll for 9 credits in order to make progress in completing their required course work. Once a graduate student has completed course work, s/he must register for at least one credit per semester to be considered full-time while preparing the dissertation. It is important for dissertation students to register for at least one credit each semester in order to defer student loan payments. In order to defer loan payments, students should file the Full Time Status Form with the Graduate School by the first day of classes each semester (the form is accessible on-line at www.temple.edu/grad/forms/index.htm). Students working on dissertations may the designated as full-time for up to a maximum of 6 semesters.

Although PhD students are normally expected to attend full-time, M.A. students are accepted for both part-time and full-time study. The department offers many courses in late afternoon and evening to accommodate part-time students who are employed during the day. However, Temple University reserves most forms of financial aid to full-time students at both levels. Part-time students are not eligible to be awarded Teaching or Research Assistantships or University Fellowships. Like full-time students, part-time students are expected to complete their degrees in a timely way. For M.A. students, the time limit is normally 3 years. For doctoral students, the Graduate School has set a limit of 7 years to complete the degree. In some cases, the Graduate School may approve an extension of the time limit (the form is accessible on-line at www.temple.edu/grad/forms/index.htm).

Incompletes

An instructor may assign an Incomplete ("I") to a student who does not complete all coursework. The "I" may be changed to a letter grade if the student completes the coursework within one calendar year. The student must file a contract with the faculty member of record stating what outstanding work remains to be completed. The faculty member must sign the contract and retain it in the student's permanent departmental file. All work must be completed, graded, and the change of grade card filed with the Office of Academic Records within one calendar year of the assignment of the Incomplete. The default grade will become permanent if work is not completed per the contract or within one year of the assignment of the Incomplete grade. A student who receives a Permanent Incomplete and wishes to receive credit for that course is required to re-register, pay tuition, and retake that course to receive a grade.

Leaves of absence

A graduate student may request a leave of absence from the Graduate School if s/he is unable to continue studying for a period of time. However, students should note that the Graduate School rarely grants more than four semesters of leave and only in exceptional circumstances. Also, students should recognize that taking a leave of absence does not affect the time limits for completing degrees. To apply for a leave of absence, the student must first obtain supporting signatures on the official form from his/her Advisor and the department's Graduate Director (the form is accessible on-line at www.temple.edu/grad/forms/index.htm).

Participation in colloquia and department life

Students who gain the most from graduate studies are those who involve themselves in the intellectual community represented by the department and the broader group of urbanists, planners, environmentalists, and community activists to whom this department is connected. All graduate students, whether full-time or part-time, are expected to participate in the life of the department and campus by attending colloquia within GUS and symposia and conferences sponsored by affiliated departments. Faculty members try to bring to students' attention various opportunities for students to attend, and to present their work at professional meetings in the city and region, as well as at national scholarly meetings.

Academic grievance procedure

When graduate students believe their academic work has been judged unfairly and need help to resolve this complaint, they should try first to communicate with the instructor whose judgment they believe to be unfair and/or with the department's Graduate Director.

A student must initiate the grievance procedure no later than the semester following the completion of the course from which the grievance has arisen. Formal grievances will be processed only during the fall and spring semesters of the academic year. The grievance process occurs in stages:

Stage I: The student prepares a written statement of the grievance, provides supporting documents (like copies of the student's work), and identifies his/her preferred remedy. The student gives copies of this material to the instructor, the Graduate Director, and the department chair. The instructor should respond in writing within one week of receiving the grievance.

Stage II: If the complaint is not resolved to the student's satisfaction during Stage I, the student may then write a letter of appeal to the department chair, again providing supporting documents. This letter of appeal with documentation is forwarded to the department's Graduate Committee. (Should any of the committee members be involved in the dispute, the department chair will appoint another member to replace that person.) The Graduate Committee may choose to interview any or all parties to the dispute. It may also request one or more faculty members (not involved in the dispute) to evaluate work where the assigned grade is contested. The Graduate Committee drafts a written statement of its findings and sends that statement to the student and the instructor.

Stage III: If the complaint is not resolved to the student's satisfaction during Stage II, the student may forward all of the relevant documents, including his/her letter of appeal, to the Associate Dean for Graduate Affars in the College of Liberal Arts, who will insure that the complaint is reviewed at the College level and convey the results to the student.

The CLA Graduate Grievance Procedure is on-line at:
http://www.cla.temple.edu/students/graduate/grievances/

Services

Computer resources

As soon as a student registers for classes, Temple University Computer Services will assign them an AccessNet ID. This can be used to send and receive e-mail, use BlackBoard software, connect to Temple's library, including its electronic databases, use OWLnet and TUPortal, and make full use of Temple's computer resources. To learn how to obtain a AccessNet ID, see https://accounts.temple.edu/selfcare/createLogin.jsp or call 215.204.8000 for help. Students are also eligible to enroll in free computer training seminars that cover subjects from basic word processing, to using BlackBoard software, constructing websites, and using digital cameras. For information about these computer seminars, see https://computerservices.temple.edu/technology-training .

Health services

Once students have paid the Student Health Services Fee, they may use Temple's Student Health Services to get basic care, both routine and to address accidents or illnesses. This is not a full-service medical facility, and paying the Health Services Fee does not provide you with health insurance, since it does not cover many medical costs like specialists or hospital visits. For information about Health Services, see http://www.temple.edu/studenthealth/ . Students are also eligible to obtain free Counseling Services at Temple to address a wide variety of personal, psychological, or emotional issues. To find out about free Counseling Services, see www.temple.edu/counseling.

Health insurance

Graduate students who are not otherwise insured can pay to enroll in a Student Health Insurance plan offered by Temple. Students can find out about the cost and extent of this insurance coverage by consulting the University's Human Resources office at http://www.temple.edu/hr/. Graduate students who serve as Teaching Assistants or Research Assistants under the TUGSA contract have the benefit of being able to enroll in a health insurance plan that is largely subsidized by Temple University. See www.tugsa.org for more information.

Student union

Graduate students at Temple University may choose to join the Temple University Graduate Student Association (TUGSA), a union that represents their interests and working conditions. To learn more about TUGSA, see www.tugsa.org

Transportation and parking

Fortunately, Temple's Main Campus is served by excellent public transportation provided by the region's transportation authority known as SEPTA. SEPTA operates buses as well as the Broad Street subway line that stops at the intersection of Broad Street and Cecil B. Moore Avenue. SEPTA also runs regional commuter trains that bring passengers from all over the region to a station only two blocks from Temple's Main Campus. www.septa.org

Students who drive to campus may gain access to gated parking lots either by purchasing parking passes or paying cash to use Visitor Parking. For information about using university parking lots, see www.temple.edu/parking

Housing

Graduate students have a wide range of affordable housing options. Detailed descriptions and information about cost and availability of on-campus housing can be obtained from the Office of University Housing (215-204-7184). Information about off campus housing options can be obtained from the university's coordinator of off-campus housing (215-204-3279), http://housing.temple.edu/

In seeking housing, students will want to consider access to the main campus which is 2 miles north of Center City (i.e., downtown). Classes are normally held in the late afternoon and early evening at the Main Campus. Faculty offices, library resources, and classrooms where most teaching assistants offer courses, are on the main campus. The main campus is easily accessible by public transportation (bus and train) and has sufficient fee-based parking lots.

Disability resources and services

If a student has a disability (either physical or learning), they should consider registering with Disability Services before they request an accommodation in their studies. Typically, the Office of Disability Services will require letters from a health care provider before a student can register. Once registered, students may request that the Office of Disability Services make recommendations to instructors regarding such things as increased time to complete assignments, or exemption from foreign language requirements. Disability Services will keep the student's record there separate from her academic record in the department and the College of Liberal Arts. This record is confidential and will be destroyed five years after the student leaves Temple.
www.temple.edu/disability/about.htm

Sexual harassment and sexual assault

Sexual harassment and sexual assault subvert the mission and work of Temple University, and can threaten the career, educational experience, and well-being of students, faculty, and staff. Temple University is committed to providing a learning and working environment that emphasizes the dignity and worth of every member of its community, free from discriminatory conduct. Sexual harassment and sexual assault, in any form or context, are inimical to this and will not be tolerated.

University policies on sexual harassment and sexual assault, which include procedures for filing complaints, are available upon request by contacting Sandra A. Foehl, Associate Vice President for Affirmative Action, Mitten Hall Lower Level, 1913 North Broad Street, Philadelphia, PA 19122-6099 or by calling 215-204-6772. More information is also available at http://policies.temple.edu/PDF/296.pdf.

Campus safety and security

It is Temple University's policy to provide to all students, upon request, a copy of the University's policies and procedures regarding campus safety and security, as well as crime rates and statistics for the most recent three-year period. In doing so, Temple University complies with two important pieces of legislation: the Pennsylvania College and University Security Information Act, and the federal Right-to-Know and Campus Security Act. To receive a copy of "You and Campus Safety," write to Temple University Department of Campus Safety Services, 1101 West Montgomery Avenue, Philadelphia, PA 19122, or call 215-204-6262. To access Temple University's Campus Safety Services go to http://www.temple.edu/safety/ . The emergency safety number is 215.204.1234 (1-1234 from campus phones).

Departmental and External Resource Units

The GIS Lab

The Specialized Learning Environment in Geographic Information Technologies is equipped to prepare students for developing skills to conduct research and to learn applications utilizing GIS applications. The GIT-SLE features 21 dual 3.02 GHz, multi-threading, Pentium Xeon workstations which are supported by a wide-range of associated peripheral devices for data input and extraction. Instructors, researchers and students learn and/or demonstrate information and techniques using the facility's advanced, digital, multi-media system. Each workstation supports a full compliment of ESRI and IDRISI GIS software applications together with Adobe Photoshop, Illustrator, and Macromedia MX Studio products for web-authoring and development. In addition to hardware and software, students, instructors and researchers have access to many datasets shared with the Social Science Data Library and the Temple-based Philadelphia Indicators Project. More data resides on the facility's dual 3.02 GHz Dell server.

The Spatial Analytics Lab at Temple (SALT)

SAL@T (Spatial Analytics Lab at Temple) is a university geographic information systems, cartography, and spatial analytics laboratory at Temple University housed and managed by the Department of Geography and Urban Studies. The central activities of the lab are to support multidisciplinary research projects and programs related to health, environment, and information technologies that are funded through external grants. In addition, the lab supports funded research and cartographic production projects implemented by faculty and students in the department. The facility is equipped with 14 GIS and cartography workstations, a teleconference center, and office support for managing projects in a 2500 square foot facility located in Gladfelter Hall on Temple University's main campus.

Internships

We encourage students to apply their skills and knowledge in a credit-bearing internship that utilizes their academic training. Assignments at planning, social service and other agencies, as well as firms that specialize in mapping and geographic data analysis, have helped students secure employment. GUS students secured internship positions in places like the Office of the Treasurer, City of Philadelphia, the Delaware Valley Regional Planning Commission, and the New Kensington Community Development Corporation. Periodically, the department holds a Career Seminar, inviting back GUS alums to discuss their job trajectories and the importance of internship experiences. For example, in a recent session they represented a range of career directions from a GIS Content Specialist at NAVTEQ, to a Policy Director for a Philadelphia City Councilwoman, and an Environmental Planner at Greensgrow Farms.

Internships are optional and available for 3 credits to MA students. Internships are separate from the required master's paper course, though MA students will be encouraged to approach their internship as an ethnography, with the possibility of extending and expanding it in the separate master's paper course."

The Information Technology and Society Research Group (ITSRG) www.temple.edu/itsrg/

ITSRG combines research and education to increase access to information and communication technologies among underserved populations. ITSRG promotes individual empowerment to improve health, enhance educational opportunities, and support local environmental management and development goals. ITSRG has been funded by the National Science Foundation, the School District of Philadelphia, and the Philadelphia Youth Network.

Institute for Public Affairs
www.temple.edu/ipa

Temple University's Institute for Public Affairs conducts, supports, and disseminates interdisciplinary research to inform and improve public policy, focusing particularly on Philadelphia, the greater metropolitan area, and the Commonwealth of Pennsylvania. IPA research targets important social, economic, and political problems, and public policies that address them and seeks to foster collaboration and intellectual exchange across disciplines, supporting scholars from all of Temple's seventeen schools and colleges.

Paley Library Urban Archives
library.temple.edu/collections/urbana/index.jsp

The Urban Archives was established in 1967 to document the social, economic, and physical development of the Philadelphia area from the mid-19th century to the present. The Archives functions as a repository for organizational records and related materials, and as a research facility for those interested in urban studies. The Archives collections are particularly strong in areas involving social service organizations, unions, housing development, community organizations, and contain many records from organizations involved with African Americans, education, and crime.

Social Science Data Library
http://www.cla.temple.edu/isr/ssdl/
The SSDL is Temple University's repository for computerized social science data and a primary center for expertise in the analysis and presentation of such data.

Center for Sustainable Communities
www.temple.edu/ambler/csc

The Center for Sustainable Communities at Temple University's Ambler campus was established in July 2000 to develop and promote new approaches to protect and preserve quality of life through sustainable development. A working resource for government agencies, community organizations, and developers, the Center provides objective information and services to improve decision-making relative to land use and water resources planning and development. The Center conducts interdisciplinary research and offers educational and community outreach programs.

Temple University Center for Data Analytics and Biomedical Informatics
http://www.dabi.temple.edu/dabi/
The mission of IST is to promote advanced research and education aimed toward solving challenging data mining, machine learning, pattern recognition, and optimization problems for an

efficient knowledge discovery at large databases. Projects currently studied at the IST Center focus on management and analysis of sequence, spatial, temporal, spatial-temporal and stream data with an emphasis to practical solutions in Bioinformatics, Geoinformation Sciences, Brain Imaging, Computational Finance, Web and Video Mining.

The Blockson Collection
http://library.temple.edu/about/locations/charles-l-blockson-af

The Charles L. Blockson Afro-American Collection is one of the nation's leading research facilities for the study of the history and culture of people of African descent. This collection of over 30,000 items has materials on the global black experience in all formats: books, manuscripts, sheet music, pamphlets, journals, newspapers, broadsides, posters, photographs, and rare ephemera. In addition, the collection houses selected artifacts, such as statues and busts. The collection must be used in-house.

Appendix A: MA and Ph.D. Program Requirements

Pathways of Entry

1. Enter with BA and accepted for a terminal MA.
2. Enter with a BA and accepted for Ph.D. program.
3. Enter with a MA in a related field and accepted for Ph.D. program. The student may bring up to 24 credits towards the doctoral program based on an evaluation of previous courses. It is the student's responsibility to submit a request and evidence for advanced standing.

MA Program in Geography and Urban Studies

30 Credits Total

Core Courses (6 credits)

Geographic Inquiry (3), and

Public Policy for Urban Regions (3) OR GUS 5041 Sustainable Natural-Human Systems (3)

One of the following GIS Courses (3 credits):
GUS 5062 Fundamentals of Geographical Information Systems, OR

GUS 5031 GIS Programming
GUS 5032 Geosimulation
GUS 5063 Remote Sensing
GUS 5065 Urban Geographical Information Systems
GUS 5066 Environmental Applications of GIS
GUS 5067 GIS and Location Analysis
GUS 5068 Census Analysis with Geographical Information Systems
GUS 5069 GIS for Health Data Analysis
GUS 5072 Advanced Remote Sensing
GUS 5161 Statistics for Urban Spatial Analysis

Other graduate methods courses can be accepted with approval of the Graduate Chair.

Two methods courses (6 credits)

Four Electives from the Menu of Elective Graduate Courses (12 credits) (see below)

GUS 9085 Internship OR GUS 8097 Research Design (with permission of chair) (3 credits)

Ph.D Program in Urban Studies

57 Credits Total

Prior to 2022, 36 Credits from GUS MA program may be transferred to fulfill requirements below.

After 2022, 30 Credits from GUS MA program may be transferred to fulfill requirements below.

Or up to 24 credits from another MA program may be approved for *advanced standing*.

Core course (3 credits)
GUS 5159 Geographic Inquiry
Methods courses (6 credits)
Electives (39 credits)
GUS 8097 Research Design (3 credits)
Research Courses

- GUS 9994 Doctoral Qualifying Examination (1 credit)
- GUS 9998 Dissertation Proposal (1 credit)
- GUS 9999 Dissertation Research (4 credits)

Examples of Elective Graduate Courses

Comparative Regional Development (3)

International Urbanization (3)

Political Ecology (3)

Urban Social Geography (3)

Urban Economic and Spatial Structure (3)

Sustainable Cities (3)

Environmental Seminar (3)

Black Geographies (3)

Sustainable Natural-Human Systems (3)

Geography of Hazards (3)

Transportation and Culture Seminar (3)

Food Systems (3)

Race, Class, Gender in the City (3)

Economic Development Planning for Cities (3)

Medical Geography (3)

Poverty and Employment (3)

Urban Housing (3)

Additional electives may be approved by the Graduate Chair.

Examples of Methods Graduate Courses

Statistics for Urban Spatial Analysis (3)

Qualitative Methods (3)

Fundamentals of GIS (3)

Environmental GIS (3) (prereq: Fundamentals of GIS)

Urban GIS (3) (prereq: Fundamentals of GIS)

GIS for Health Data Analysis (3) (prereq: GUS 5062 or another basic statistics course at the graduate level)

Cartographic Production (3)

Cartographic Design (3)

Census Analysis with GIS (3)

Community Based Program Evaluation (3)

Advanced Statistics for Urban Applications (3) (prereq: Statistics for Urban Spatial Analysis or equivalent)

Appendix B: Sample Programs Based on Sample Course Rotation

Sample Curriculum 1: Terminal MA in Geography

This is a sample curriculum for a full-time student attaining a terminal MA in Geography. The student is interested in sustainability issues. The degree is completed in two years.

Year 1

Fall	Spring
Geographical Inquiry (3)	Sustainable Natural Human Systems (3)
Political Ecology (3)	Remote Sensing (3)
Fundamentals of GIS (3)	Stats for Urban/Spatial Analysis (3)

Year 2

Fall	Spring
Environmental GIS (3)	GUS 9085 Internship(3)
Geography of Hazards (3)	Urban GIS (3)
Food Systems (3)	Sustainable Cities (3)

Sample Curriculum 2: Terminal MA in Geography

This is a sample curriculum for a full-time student attaining a terminal MA in Geography. The student is interested in community development. The degree is completed in two years.

Year 1

Fall	Spring
Geographical Inquiry (3)	Qualitative Methods (3)
Urban Housing (3)	Black Geographies (3)
Fundamentals of GIS (3)	Stats for Urban/Spatial Analysis (3)

Year 2

Fall	Spring
Urban GIS (3)	Research Design (3)
Econ Development Planning for Cities (3)	Comm Based Program Evaluation (3)
Race, Class, Gender in Cities	Cartographic Production (3)

Sample Curriculum 3: Ph.D. in Geography, student enters with BA

This is a sample curriculum for a full-time student in the doctoral program admitted with a BA. The doctoral degree is attained in five years, but could be accelerated with dissertation credits in the summer.

Year 1

Fall	Spring
Geog Inquiry (3) Urban Housing (3) Fundamentals of GIS (3)	Sustainable Natural Human Systems (3) Public Policy (3) Stats for Urban/Spatial Analysis (3)

Year 2

Fall	Spring
Econ Devel Planning for Cities (3) Adv Stats for Urban Applications (3) Qualitative Methods (3)	Internship (3) Urban GIS (3) Comm Based Program Eval (3)

Year 3

Fall	Spring
Urban Econ and Spatial Structure (3) Race, Class, Gender in Cities (3) Sustainable Cities (3)	Comm Based Program Eval (3) Research Design (3)

Year 4

Fall	Spring
Exams (1)	Proposal Defense (1)

Year 5

Fall	Spring
Dissertation Research (4)	Dissertation Defense

Sample Curriculum 4: Ph.D. in Geography, students enters with MA

This is a sample curriculum for a full-time student in the doctoral program admitted with a MA in Geography. The student receives the maximum of 24 credits of advanced standing. The doctoral degree is attained in four years, but could be accelerated with dissertation credits in the summer.

Year 1

Fall	Spring
Geog Inquiry (3) International Urbanization (3) Fundamentals of GIS (3)	Sustainable Natural Human Systems (3) Political Ecology (3) Urban GIS (3)

Year 2

Fall	Spring
Qualitative Methods (3) Urban Econ and Spatial Structure (3)	Exams (1) Research Design (3)

Year 3

Fall	Spring
Proposal Defense (1)	Dissertation Research (2)

Year 4

Fall	Spring
Dissertation Research (2)	Dissertation Defense

Sample Curriculum 5: Ph.D. in Urban Studies, students enters with MA

This is a sample curriculum for a full-time student in the doctoral program admitted with a MA in Geography. The student receives the maximum of 24 credits of advanced standing. The doctoral degree is attained in four years, but could be accelerated with dissertation credits in the summer.

Year 1

Fall	Spring
Qualitative Methods (3) Geog Inquiry (3) Black Geographies (3)	Political Ecology (3) Public Policy (3) Environmental GIS (3)

Year 2

Fall	Spring
Sustainable Cities (3) Cartographic Design (3) Research Design (3)	Exams (1)

Year 3

Fall	Spring
Proposal Defense (1)	Dissertation Research (2)

Year 4

Fall	Spring
Dissertation Research (2)	Dissertation Defense

Appendix C. Course Descriptions

Note: New courses are added every year. Please see the yearly bulletin for a complete listing: https://bulletin.temple.edu/graduate/courses/gus/

Core courses

GUS 5159. Geographic Inquiry
This course familiarizes students with the theoretical, conceptual and methodological debates underlying the use of spatial analysis in the social sciences. Students will 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.

GUS 8097. Research Design
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 the fundamentals of designing investigations using a variety of methods and data to better understand urban processes, problems, and topics. Students learn to critically evaluate as well as conduct research, how to formulate meaningful research questions, how to design studies using different research methods, and how to develop a rigorous research proposal.

Research Methodologies and Statistics Courses

GUS 5062. Fundamentals of GIS
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 geocoding, and basic vector and raster operations.

GUS 5063. Remote Sensing. 3 Credit Hours.
This course introduces students to the most basic concepts and skills for downloading, exploring and processing satellite data for broad remote sensing applications. The course is designed to guide students through the most relevant steps required from acquisition to production for the application of remote sensing to agriculture, forestry, ecology and hydrology, as well as for characterizing and assessing changes in urban and rural landscapes and in seascapes. The course will include weekly lab sessions that will allow students to apply the concepts and procedures learned in class and improve their skills on the use and application of remote sensing information.

GUS 5065. Urban GIS
(Prerequisite: GUS 5062 or another basic statistics course at the graduate level)
Assumes basic familiarity with Geographic Information Systems. Focuses on applying GIS techniques to the study of such processes as urban sprawl, socioeconomic change, and ecological functioning of urban regions.

GUS 5066. Environmental GIS

(Prerequisite: GUS 5062 or another basic statistics course at the graduate level)
Assumes basic familiarity with Geographic Information Systems. Focuses on the techniques, data, and interpretations from GIS analysis are applied across a variety of environmental fields. Topics to be covered include natural hazard vulnerabilities, global climate change, renewable energy potential, environmental health, and conservation.

GUS 5069. GIS for Health Data Analysis

(Prerequisite: GUS 5062 or another basic statistics course at the graduate level)
Geographic Information Systems (GIS) has emerged as an essential tool for health researchers and practitioners. This course provides an introduction to the most common geographic methods utilized in health research and spatial epidemiology for mapping and analyzing health disparities, disease risk factors, health services and geographic variation in health outcomes and disease. Through lecture and laboratory exercises students will learn how to create and edit spatial data, create disease maps, develop neighborhood-based measures, conduct geographic cluster detection and point pattern analysis, map geographic health disparities, measure access to health services, and critically assess potential study bias introduced from missing geographic data or positional accuracy. Selected case studies will be presented in order to highlight methods and techniques and hands-on experience will be gained through laboratory exercises and real-world applications.

GUS 8065. Cartographic Design (3 s.h.)

The focus is on practical work with photographic and related processes to produce a map printed in color.

GUS 5061. Cartographic Production (3 s.h.)

This course presents advanced approaches to design and production of thematic maps.

GUS 5161. Statistics for Urban Spatial Analysis

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; factor, principal component and cluster analysis.

GUS 5162. Advanced Statistics for Urban Applications

(Prerequisite: GUS 5161 or another introductory statistics course taken at the graduate level) 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.

GUS 5163. Qualitative Methods

This course is designed to foster an understanding of the principles and appropriate application of qualitative methods in Urban Studies. The course will provide an overview of qualitative research design and emphasize the connections between grounded theory, explorative inquiry, and thick description with the research approach taken. Specific skills that will be introduced are: 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.

GUS 8032. Community Based Program Evaluation

The course focuses on how to design and conduct evaluation plans that are useful for improving community-based human service and educational programs, and 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.

Electives

GUS 5014. Social Geography

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.

GUS 5015. Land Use Planning

An examination of the forces that influence land use planning in and around American metropolitan regions. 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 examines separately housing, commercial locations, and industrial development.

GUS 5018. Economic Development Planning for Cities

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.

GUS 5021. International Urbanization

This course examines urbanization around the world. The focus may include issues of rapidly industrializing areas, postcolonial and transition societies. Students will address topics related to the effects of rapid social and spatial change in a variety of settings. They will 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.

GUS 5032. Geosimulation.

Geosimulation (or spatial simulation) "is a catch-all phrase" that can be used to represent an emerging stream of spatially-explicit simulation models, often being computationally intensive. Developed at the confluence of geographic information science and computer science, geosimulation incorporates different computational systems such as cellular automata (CA) and agent-based modeling (ABM). This course will explore the conceptual, developmental, implementational, and evaluation aspects of these different simulation modeling systems. We primarily focus on cellular automata, agent-based systems, neural networks, and expert systems using geographical data, (hence spatially-explicit models). Simulation models developed using these techniques are used to investigate patterns and processes of complex systems in different topical areas such as urban growth, climate change, migration, birds and animal movements, environmental health, and conservation. This course builds upon the concepts introduced in Fundamentals of GIS, GIS Programming and other GIS courses offered by the department. The course structure will consist of lecture, class discussion, and lab activities. Students will be expected to read academic and professional literature and to actively participate in and lead class discussions. Students will also be expected to develop a final project on geosimulation modeling topic. Preferably, they will develop and implement a CA or ABM model of their own.

GUS 5033. Urban Analytics.

With the increase of data availability and the computing power together with advanced data analytics, the data driven approach becomes a more objective and scientific way for us to understand the urban system for solving the social, economic, and environmental challenges in cities. Knowledge and skills for collecting and analyzing urban spatial data become an essential skill for urban researchers. This course will teach students the concepts, techniques, and analytical methods for urban analytics. Methods for collecting, storing, processing, analyzing, and visualizing various types of urban data using programming will be taught in this course. Examples of real urban analytics applications will be introduced in this course in order for students to get the practical skills in handling urban spatial data. The course is designed for students who have programming experience and want to reinforce the knowledge and skills and learn advanced topics in urban informatics and urban data analytics for solving urban issues. This course includes lectures and lab exercises. The knowledge and skills learned in this course further prepare students for an emerging career in smart city, data science, GIS, urban planning, and environmental management.

GUS 5041. Sustainable Natural-Human Systems. 3 Credit Hours.

This course provides the scientific basis and theoretical background for understanding the most essential challenges to address sustainability in natural-human systems. The course will provide knowledge about theories, conceptual frameworks and research methods to understand and appreciate the interactions and co-dependencies between human and natural systems. The course will also introduce students to the main global research and policy agendas to understand and address sustainability in natural-human systems.

GUS 5044. Urban Housing

An overview of the economic, social, physical, and political forces that have molded the present urban housing stock. Examination of the implications of present urban housing stock. Examination of the implications of present trends for the future and the development of rational housing policies, emphasizing the Philadelphia metropolitan area.

GUS 5043. Black Geographies
This course explores theoretical and methodological advances made by the interdisciplinary field of Black geographies. Texts and discussions will draw on the discipline of geography along with theorizing from Black studies, Black feminism, queer studies, anthropology, sociology, and political science to highlight how erasures, exclusions, and exploitations of Black people have structured historical and current world conditions. The course will center lessons from Black knowledges, radical struggles, and everyday life practices as a guide for scholarship and action aimed toward reshaping a new, more just world.

GUS 5056. Political Ecology
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 space in cities. The critical roles of the state, non-government organizations, and individual actors in shaping social, political, and economic landscapes are considered.

GUS 5061. Cartographic Production Advanced approaches to design and production of thematic maps.

GUS 5071. Medical Geography 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.

GUS 5075. Comparative Regional Development
This course examines the transformations that, beginning with the European expansion 500 years ago, have to a large extent created the regional variation we see today. We consider theoretical approaches to understanding 'modernization' and 'development" and build on this foundation to look at the historic factors that have shaped different parts of the world. We examine 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.

GUS 5096. Problems of Environmental Quality Local urban environmental problems are considered by members of the class in research teams, with a view toward seeking possible solutions to them.

GUS 5097. Race, Class, Gender in Cities
Research seminar that examines the spatial dimensions of metropolitan inequality, focusing on how inequality is perpetuated along class, race, and gender lines. Topics include urban growth politics, zoning and land use planning, domestic architecture, racial segregation, poverty, and homelessness. Students will design a research proposal based on course materials.

GUS 8011. History and Theory of Urban Studies
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.

GUS 8016. Public Policy for Urban Regions
This course introduces students to the major policy approaches used to sustain and develop cities and regions in the U.S. 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.

GUS 8021. Geography of Urban Services
Analysis of concepts basic to understanding spatial service patterns. Emphasis is on use of models in service area delineation.

GUS 8031. Critical Issues in Globalization, Sustainability, and Social Justice
This course will explore the theories, facts, and debates related to globalization, sustainability, and social justice, the themes that are critical to understanding contemporary urban conditions and dynamics. The course will provide students an overview of a wide range of issues, in a number of US and international settings, and at several spatial scales. The material will be foundational for making decisions on research topics.

GUS 8033. Urban Economic and Spatial Structure
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 the internal structures of cities and their consequences for access and distribution in fragmented metropolises.

GUS 8043. Seminar on Homelessness
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 U.S., substance abuse and mental illness among the homeless, homeless women and children, homelessness in Philadelphia, and public policies needed to address the problem.

GUS 8045. Poverty and Employment
Examines the relationships among the globalization of the economy, economic restructuring, metropolitan labor markets, and poverty focusing on contemporary U.S. cities. The course will

evaluate theoretical and public policy debates about employment and poverty. Particular attention will be paid to how class, gender, and racial inequities are reproduced in the urban economy.

GUS 8047. Comparative Urban History
Review of methodological tools for comparative readings and research on the history of cities, across cultural and chronological boundaries.

GUS 8050. Environmental Seminar
This course is designed to provide an understanding of the ecological consequences of contemporary economic development. The focus is on countries at the low end of the developmental scale in the countries of 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.

GUS 8055. Sustainable Cities
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 will include social and economic drivers of urban development and suburban sprawl,; the principle of carrying capacity and 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.

GUS 5307 Transportation and Culture
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.

GUS 8055 Geography of Hazards: Planning, Policy, & Sustainability
Natural and technological hazards are the focus for this course. We review the evolution of theoretical and applied conceptualizations of "hazard" and hazard vulnerability, examine the human dimensions of the resultant hazardscapes, and look to past, present, and anticipated "cases on the ground." Our emphasis is on geographical approaches, but this can be read as a broadly interdisciplinary perspective, as is typical of most geographical analysis. Among the varied issues we may take up are metropolitan impacts of climate change, coastal vulnerability, nuclear hazards, seismic threats, and public health threats associated with disease, hunger, and nutrition. Global, as well as U.S. and local perspectives, are integral to the course.

GUS 5304 Food Studies

This course introduces students to key issues in food studies. The seminar begins with an exploration of what constitutes food systems. We focus on the agricultural transitions that took place over the last 100 years, and explore some of the misunderstandings, romanticizations and erasures that occur when we retell the story of agricultural change. We then turn to look at issues of food security, access and control, ultimately focusing our attention to the question of how to produce more just food systems. The final third of the course is dedicated to questions of eating, critical nutrition and bodies.