

STUDENT MANUAL

SCHOOL OF CITY AND REGIONAL PLANNING

COLLEGE OF DESIGN

GEORGIA INSTITUTE OF TECHNOLOGY

**MASTER OF SCIENCE IN
GEOGRAPHIC INFORMATION SCIENCE
AND TECHNOLOGY**

Academic Year 2020 -2021

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I. INTRODUCTION

The faculty and staff of the School of City and Regional Planning provide this Student Manual to answer many of the questions that can arise during a student's time within the MS-GIST program at Georgia Tech. It includes information on a wide range of student concerns and provides detailed explanations of School requirements and applicable policies. **This manual should be consulted first when a student has curricular or other program-related questions.**

The manual also serves as a contract between the School and its students. It includes many university rules and regulations, as well as School policies. Those policies are effective and binding for all students in the School of City and Regional Planning entering in the current academic year. Students enrolling at other times are bound by the policies in effect at the time they entered the MS-GIST Program. Students should retain the copies of the manual provided them upon entry into the School for reference during their entire period of enrollment. However, should any student fail to enroll at Georgia Tech for at least one semester during any academic year, the provisions of this manual may be superseded by provisions of the manual in existence at the time the student re-enrolls.

When changes in certain student policies are made, students already enrolled may, at their option, continue under either the former or new policies. Such policies include those pertaining to areas of concentration, final examinations, theses, and academic performance. Any questions about which policies are applicable or which options are available to students entering the School at a specific time should be addressed to the faculty advisor or the School Chair.

Finally, the manual should allay doubts and possible misconceptions about students' rights and obligations. Any questions that are not answered by the manual should be referred to a student's advisor or to the School Chair. The School and its policies are subject to reconsideration through the participation of students and their duly elected representatives in faculty meetings.

II. THE GEORGIA TECH ACADEMIC HONOR CODE

Students enrolled in MS-GIST program are subject to the provisions of the Georgia Tech Academic Honor Code (see <http://www.catalog.gatech.edu/rules/18>). **It is the responsibility of all students to read and agree to the provisions of this Code prior to their enrollment in the School. Further, it is the responsibility of all faculty members to report instances of violations of this Code to the Office of the Dean of Students.**

The Honor Code addresses an important aspect of a student's personal and professional development – a sense of integrity and place within a community. Students have even greater responsibilities in these areas since our fields promote ethical principles of integrity, honest, fairness, and community membership. In short, when a student in our School violates the Honor Code s/he demonstrates a lack of professional competence that harms the individual involved. Further, the offending student harms the larger community of classmates, faculty, and the School by showing a lack of respect for their community and violating a sense of trust within that community. No acts of cheating, plagiarism, or unauthorized collaboration will be tolerated in the School. All such instances will be reported to the Dean of Students Office for investigation.

The Honor Code lays out at least three specific areas of academic misconduct. First, students are prohibited from *cheating* by copying each other's work (such as during an exam) or turning in the work of another student as one's own work.

The second form of academic misconduct is *plagiarizing the work of others*. The Honor Code (see <http://www.catalog.gatech.edu/rules/18>) defines plagiarism as:

Submission of material that is wholly or substantially identical to that created or published by another person or persons, without adequate credit notations indicating the authorship.

When a student's written work borrows ideas from elsewhere, the source must be cited in an appropriate manner as defined in the *Journal of the American Planning Association* or defined otherwise by the instructor. When exact phrasing is used, the source must be cited and the material must be marked by quotation marks or indented in the manner used above for the quotation from the Honor Code. Students must clearly distinguish their own work from the work of others.

In recent years, with the availability of materials on the Internet, problems with plagiarism have grown. Students have copied materials from sources on the web and inserted them directly or with minor editing into their work without citation. This constitutes plagiarism. Do not submit any assignments for a course that has text drawn word-for-word from another source (in print or on the web), without quotation and proper citation. Do not paraphrase the words in another document (in print or on the web) without proper citation. Any form of plagiarism is a violation of the Academic Honor Code.

The third form of academic misconduct is *unauthorized collaboration* on coursework. In the School of City and Regional Planning, students will be required to work together in teams or encouraged to work together in small study groups on assignments. This form of collaboration is essential to the educational mission of the School. However, it is possible for students to violate the spirit of this collaboration by acting in unauthorized ways (for example, dividing up a homework assignment into several parts and doing your part, then copying the work of others). Faculty members have been asked to provide greater descriptions of what they mean by "appropriate" collaboration. Ultimately though, it is the responsibility of the student to clarify any questions that s/he may have and to ascertain whether the collaboration s/he has in mind is authorized or not. Unless it is spelled out clearly by the instructor as "appropriate," students should assume all else is inappropriate.

It should be noted that it is the policy of the School that those who knowingly assist a person in cheating or plagiarism are equally at fault and are subject to the same penalties.

If a student has a question about the Honor Code, s/he should contact the Office of the Dean of Students or the School of City and Regional Planning Chair.

III. CITY AND REGIONAL PLANNING FACULTY AND STAFF

A. Faculty

Nisha Botchwey, Associate Professor, Ph.D., University of Pennsylvania, 2003. Areas: Community Development, Public Health, Qualitative Methods.

Paige Clayton, Assistant Professor, Ph.D., University of North Carolina, 2019 Areas: Economic Development, Qualitative Methods.

Richard Dagenhart, Professor Emeritus, Architecture. M Arch & MCP, Pennsylvania, 1972. Areas: Urban Design and Urban Development Methods.

Michael Dobbins, FAIA, AICP, Professor of Practice, M Arch, Yale, 1965. AIA, APA, Congress of New Urbanism. Former Commissioner, City of Atlanta Planning Development & Neighborhood Conservation Department. Areas: Urban Design, Development Controls.

William J. Drummond, Associate Professor and Director of the MS-GIST program, Ph.D., University of North Carolina, 1988. APA, Urban and Regional Information Systems Association. Areas: Geographic Information Systems, Land Use Planning, Computer Applications in Planning, and Planning Methods.

Michael L. Poirier Elliott, Associate Professor, Ph.D., MIT, 1984. APA, Society of Professionals in Dispute Resolution and Society for Risk Analysis. Areas: Environmental Policy, Urban Design, Negotiation and Mediation, and Planning Process.

Steven P. French, FAICP, Professor and Dean, College of Design, Ph.D., University of North Carolina, 1980. APA, Urban and Regional Information Systems Association, and Earthquake Engineering Research Institute. Areas: GIS, Land Use and Environmental Planning, and Computer Applications in Planning.

Alberto Fuentes, Assistant Professor. Ph.D., MIT, 2014. Areas: Global Development, Industrial Transformation, Latin America.

Subhro Guhathakurta, Professor and Director of Center for Geographic Information Systems, Ph.D., University of California , Berkeley, 1991. Areas: Geographic Information Systems, Environmental Planning, Urban Sustainability.

Nancey Green Leigh, FAICP, Professor, Ph.D., University of California, Berkeley, 1989. APA. Areas: Economic Development, Brownfield Redevelopment, and Industrial Restructuring's Effect on Regional Economics.

Catherine L. Ross, Harry West Endowed Professor and Director of the Center for Quality Growth and Regional Development, Ph.D., Cornell University, 1979. APA. Areas: Transportation Planning, Land Use, Travel Behavior and Transportation, Public Involvement, Economic Development, Human Services, Policy Planning, and Planning Methods.

David S. Sawicki, FAICP, Professor Emeritus, Ph.D., Cornell, 1970. APA. Areas: Methods of Policy Analysis and Planning, Urban Policy, and Microcomputer Applications in Planning.

Bruce Stifftel, FAICP, Professor and Chair, Ph.D., University of North Carolina, 1986. APA, American Water Resources Association. Areas: Land Use and Environmental Planning, Planning Theory, Planning School Performance.

Brian Stone, Professor, Ph.D., Georgia Tech, 2001. APA. Areas: Urban Environmental Management, Land Use and Transportation Interactions, Air Quality and Climate Change.

Perry Pei-Ju Yang, Associate Professor, Ph.D., National Taiwan University, 2001. Urban Design, GIS and Urban Simulation.

B. Adjunct and Affiliated Faculty

Anthony J. Giarrusso, Research Scientist I, GIS Center. MCP, Georgia Tech, 2000. Areas: GIS, Greenspace Decision Support.

Randall Guensler, Associate Professor, Civil and Environmental Engineering. Ph.D., UC-Davis, 1993. Areas: Transportation Engineering, Air Quality and Transportation.

David Haddow, Principal, Haddow & Co. MCP, Georgia Tech, 1979; MBA, Georgia State, 1982. Areas: Land Use, Real Estate Development, Public Finance and Fiscal Analysis.

Edrick Harris, Senior Development Manager, H. J. Russell & Company. MCP, Georgia Tech, 2000. Areas: Land Development, Real Estate.

Julian Juergensmeyer, Professor and Ben Johnson Jr. Chair in Law, Georgia State University. J.D., Duke University, 1963. Areas: Land Use Planning and Development Regulation Law, Growth Management Law.

E. Larry Keating, FAICP, Professor Emeritus, Ph.D., Wisconsin-Madison, 1978. APA. Areas: Planning Process, Housing Policy, and Land Economics.

Ramachandra Sivakumar, Senior Research Engineer, C-SPAV. MCP, Georgia Tech, 2000. Areas: GIS, system design and management

C. Staff

Sei Yoshioka-Cefalo, Academic Program Manager

Zoe Kafkes, Marketing and Events Coordinator

Johnnie Sawyer, Academic Advisor

IV. ADVISING

A. Orientation and Initial Advising

The School holds an Orientation Session for new graduate students during the week before classes start in the fall semester. At that time, general MS-GIST requirements are explained. Students are also assigned a temporary faculty advisor. During the first month of the fall semester, students will identify their choice of advisor and indicate that choice of a permanent faculty advisor on their course of study form.

B. Ongoing Advising

The MS-GIST Program provides two forms of advising for students. The permanent faculty advisor is an important resource to students. This faculty member can provide useful advice about the student's academic interests, career choices, and course scheduling. The purpose of the advising arrangement is: (1) to assure students of consistent application of School procedures, and (2) to assure the School that students are pursuing their program of study and satisfying matriculation and graduation requirements.

The School also has a staff Academic Advisor to assist students throughout their academic career at Tech in understanding academic requirements, fulfilling important paperwork requirements, assisting in searches for part-time and permanent employment, and other academic services.

Each student, during the first month of the student's first semester, will develop and submit a written *Program of Study* with the assistance of a faculty advisor. The *Program of Study* must then be approved by a faculty advisor and by the School Chair. The fundamental purpose of the Program of Study is to assure that students are clear in their educational goals while at Georgia Tech and that their course of study will fulfill the requirements of the MS-GIST degree.

Variations from this Program of Study must be approved by the permanent advisor and the Chair. At the beginning of each subsequent semester, students are responsible for revising their programs of study, obtaining appropriate faculty approvals and signatures, and submitting the revised Program of Study to the School Chair.

C. Capstone Project Advising

Students will develop an MS-GIST capstone project as a major component of the MS-GIST Capstone Project course. During the student's second semester the student must nominate one faculty member to serve as their principal advisor for their capstone project. The project advisor will usually be a Georgia Tech academic faculty member or a Georgia Tech research faculty member, although in certain cases the project advisor may be an academic faculty member from another university. Capstone project advisors must be approved by the MS-GIST Program Director.

V. COURSE REQUIREMENTS

A. Objectives and Organizing Principles

The primary purpose of the Master of Science in Geographic Information Science and Technology degree program is to educate professionals for a career in the field of geospatial technologies. A secondary purpose is to provide specialized geospatial technology education for current professionals in established fields such as architecture, landscape architecture, city planning, civil engineering, environmental engineering, and management. The major educational objectives of the program are to:

- Provide the highest quality education for our students to help them become effective practitioners and assume leadership roles in geospatial technology professions,
- Advance the state of knowledge of geographic information science and technology,

- Transform geospatial technology practice by integrating knowledge and action, and
- Expand synergies among faculty, researchers, students, staff of the MS-GIST Program with other programs, centers, and institutes across campus and throughout the region

B. Program of Study

The program of study for the MS-GIST includes one prerequisite (or one year of equivalent professional experience), eight required core courses (three of which are one-credit seminars), two specialized GIS classes, two free elective courses, and the Capstone Project course.

a. Prerequisite Course:

A basic understanding of GIS technology is required as a prerequisite of the degree program. This may be achieved through one of four options:

- 1) CP 4510 Geographic Information Systems (3-0-3) or
- 2) CP 6514 Introduction to Geographic Information Systems (3-0-3) or
- 3) equivalent coursework at another institution (as evaluated by the program director) or
- 4) one year of equivalent professional experience (as evaluated by the program director)

b. Required Courses:

The required GIS courses are: (with lecture hours – lab hours – credits)

- CP 6024 Analytical Methods (3-3-4) (See note below)
- CP 6521 Advanced GIS (3-0-3)
- CP 6531 Introduction to Remote Sensing (3-0-3)
- CP 6581 Programming for GIS (3-0-3)
- CP 8811 Visualization (1-0-1)
- CP 6591 GIS Professional Seminar (1-0-1)
- CP 6592 Capstone Project Preparation (1-0-1)
- CP 6595 GIS System Design and Management (3-0-3)
- CP 6596 Capstone Project (3-0-3)

Note: For this academic year students may substitute CP 6025: Statistical Methods

c. Specialized GIS courses:

Beyond the basic core of geospatial technology we offer a range of specialized GIS data sources and analytical methods. MS-GIST students are required to take a minimum of two specialized GIS courses that focus on the application of GIS technology to specific areas. These courses must be approved by the MS-GIST program director. They may include (but are not limited to):

- CP 6570 Socioeconomic GIS (3-0-3)
- CP 6541 Environmental GIS (3-0-3)
- CP 6542 Transport & GIS (3-0-3)
- CP 8853-AR Public Health Analytics (3-0-3)
- CP 8853-CA Spatial Networks (3-0-3)
- CP 8853-BD Climate Change Analytics (3-0-3)

d. Free electives

These two courses are selected by the student and may include graduate courses and non-CP 4000 level undergraduate classes at Georgia Tech. Courses at other institutions, such as Emory University or Georgia State University, may also be taken, but must be approved by the program director.

e. Traditional one-year curriculum

Semester/Year	Course Type	Prefix	Number	Course Name	Credits	Professor	Grade
Fall 2019	Required	CP	6581	GIS Programming	3	Drummond	
Fall 2019	Required	CP	6531	Introduction to Remote Sensing	3	Faust/Sahar	
Fall 2019	Required	CP	6591	Professional Seminar	1	Giarrusso	
Fall 2019	Required	CP	6006	Visualization	1	Staff	
Fall 2019	Specialized GIS	CP	6542	Transport & GIS	3	Welch	
Fall 2019	Elective	CP	6112	Intro to Land Use	3	Guhathakurta	
Spring 2020	Required	CP	6024	Analytical Methods	4	Staff	
Spring 2020	Required	CP	6521	Advanced GIS	3	Sung	
Spring 2020	Required	CP	6592	Capstone Preparation	1	Drummond	
Spring 2020	Specialized GIS	CP	6570	Socioeconomic GIS	3	Drummond	
Spring 2020	Elective	CP	6836	Urban Ecological Design	3	Yang	
Summer 2020	Required	CP	6595	GIS System Design & Management	3	Ramakumar	
Summer 2020	Required	CP	6596	Capstone Project	3	Ramakumar	
Total credits (34 required for graduation)					34		

f. Alternate one-year curriculum

Semester/Year	Course Type	Prefix	Number	Course Name	Credits	Professor	Grade
Fall 2019	Required	CP	6581	GIS Programming	3	Drummond	
Fall 2019	Required	CP	6531	Introduction to Remote Sensing	3	Faust/Sahar	
Fall 2019	Required	CP	6591	Professional Seminar	1	Giarrusso	
Fall 2019	Required	CP	6006	Visualization	1	Staff	
Fall 2019	Required	CP	6025	Statistical Analysis	4	Guhathakurta	
Fall 2019	Specialized GIS	CP	6542	Transport & GIS	3	Welch	
Spring 2020	Required	CP	6521	Advanced GIS	3	Sung	
Spring 2020	Required	CP	6592	Capstone Preparation	1	Drummond	
Spring 2020	Specialized GIS	CP	6541	Socioeconomic GIS	3	Drummond	
Spring 2020	Elective	CP	6836	Urban Ecological Design	3	Yang	
Spring 2020	Elective	CP	6213	Urban Environmental Planning	3	Guhathakurta	
Summer 2020	Required	CP	6595	GIS System Design & Management	3	Ramakumar	
Summer 2020	Required	CP	6596	Capstone Project	3	Ramakumar	
Total credits (34 required for graduation)					34		

C. Transfer Credit

Credit may be granted against the 34-hour requirement for graduate courses taken elsewhere prior to enrollment. The Institute’s upper limit is six semester credits. Courses for which transfer credit is requested must meet the following minimum requirements:

- They were not part of the requirements of any degree previously completed or currently in progress.
- They were graduate level courses of comparable rigor to courses in the MS-GIST Program.
- Their subject area is closely related to that of School courses.

Requests for transfer credit should be made to the School Chair by the first business day of the fifth week of the first semester in which the student is enrolled in the School. The request must be accompanied by: (1) an official transcript of the institution that granted courses for which credit is being requested, (2) syllabi of those courses, and (3) a substantial sample of work completed for those courses. The minimum acceptable grade for transfer courses is “B.” The School Chair shall decide whether to grant all or any part of the transfer credit request before the end of that semester. The School Chair may seek the advice and consent of the faculty on any such request.

D. Undergraduate Courses Taken While in MS-GIST Degree Program

No CP prefix undergraduate courses may be counted toward the requirements for the MS-GIST degree. School students may enroll in and receive credit for course work at the 4000 level or above taken at Georgia Tech outside of the School of City and Regional Planning provided they are part of an approved program of study. This may be particularly appealing to students who wish to avail themselves of the

large number of architecture courses available within the College. Students can use up to 6 semester hours of 4000-level courses toward their 34-credit hour Program of Study (course with numbers less than 4000 cannot be used toward a graduate degree in the School).

E. Courses Taken at Georgia Tech as an Undergraduate

No student who takes undergraduate courses offered by the School while an undergraduate at Georgia Tech can use those courses toward the MS-GIST degree. Undergraduate students who take graduate courses at Georgia Tech, however, may apply up to 6 hours of those courses toward the degree, if admitted to the School, provided these courses were not used for any undergraduate degree requirements and provided they have received approval from the School Chair.

F. Cross-Registration for Courses Taken at Other Atlanta Region Universities

Through cross-enrollment, coursework taken at Georgia State University (GSU), the University of Georgia (UGA), Emory University, and other Atlanta Regional Consortium for Higher Education (ARCHE) members may be applied directly against the 34 semester-hour requirements of this School and not counted as transfer credits. There are limitations. Those courses must be part of a student's approved program of study and comparable courses must not be available at Georgia Tech. To cross-enroll at one of these institutions, you must submit a departmentally approved cross-enrollment form to the Georgia Tech Cross-Registration person in the Registrar's Office on or before a specified date. Be aware that the cross-enrollment deadline for Fall Semester occurs during the summer when most students are off campus. For example, the deadline for Fall Semester cross-enrollment is mid-July. The deadline to apply for cross enrollment for Spring Semester is on or around November 15.

G. Student's Responsibility for Proper Registration

It is the responsibility of the student to ensure that the Institute's official course enrollment information pertaining to him or herself is correct. If the student fails to correct registration information, the student is responsible for any negative consequences that may result. For example, if a student does not successfully drop a course prior to the deadline printed in the OSCAR (which is typically the fifth week of the semester), and does not complete the course, a letter grade of "F" will be assigned. For this reason, it is a good idea for all students to print and retain a copy of their course schedule when registering for or adding/dropping courses.

Please note that the last day to add a course is the Friday of the first full week of classes. Therefore, it is critical that you be fully registered for all courses you believe you will take in the semester by this deadline. You may drop courses at any time up to the fifth week of the semester (check the OSCAR for the exact deadline). A grade of "W" will show on your internal transcript for those courses dropped after the first week of classes and before the final drop deadline. External transcripts (sent to individuals or organizations outside Georgia Tech) will not list the dropped course.

H. Waiver of Required Courses

Some students will have satisfactorily completed coursework elsewhere that is comparable to courses in the MS-GIST core. In those situations, students may apply for a “waiver” from taking certain required core courses.

Requests for a waiver of course requirements must be made immediately upon enrolling in the School in the student’s first semester. A Course Waiver Approval Form is available from the Academic Advisor. This form must be accompanied by: (1) an official transcript of the institution that granted credit for the course(s) on which the waiver is requested, (2) syllabi of the course(s), and (3) a substantial sample of work completed for the course(s). The acceptable minimum grade in the course(s) is “B,” but the School reserves the right to increase that requirement to an “A” based on the type of course, the grading scheme, and the rigor entailed relative to the course requested for waiver. The course waiver approval form requires signatures from the instructor of the course to be waived, the student’s advisor, and the MS-GIST Program Director.

Waiver of any course does not reduce the 34 semester-hour requirement. When students have required courses waived, they must substitute elective courses of equal or greater credit.

In the event the waiver request is denied, the student must enroll for and complete the subject course in the normal course of study. If the waiver is requested for a course offered during the semester in which the waiver is processed, the student must enroll in that course and perform assignments in that course until the waiver is decided. In this way, if the waiver is denied, the student will not have lost valuable time toward matriculation. In those situations, however, the School Chair will endeavor to decide the request not later than the end of the second week of that semester.

VI. ACADEMIC PERFORMANCE

A. Graduation Requirements

1. GPA: In order to graduate, a student must attain a minimum overall 2.7 grade point average (as computed by the Registrar).
2. Credits: 34 semester-hours, with a minimum of 28 hours of actual coursework drawn from courses with a CP prefix.
3. Coursework: All core courses must be passed with a "C" or better, unless waived by the School. In addition the School requires an absolute minimum of 6 semester credit hours of substantive area coursework. All 34 credit hours must be taken for a letter grade.
4. A completed “Petition to Graduate.” There are several steps to this process. Please make sure you follow these steps carefully to ensure that they are complete and correct.
 - a. During the semester prior to your planned graduation, you must complete the Degree Petition and Institute Program of Study forms, which may be obtained from the School Academic Advisor or online at http://www.registrar.gatech.edu/docs/pdf/GRAD_PETITION_FOR_DEGREE.pdf.

To guide you through completing these forms, you will need your MS-GIST Program of Study (described in Section IV.B) that you initially prepared in the first month of your enrollment and updated each subsequent semester. You must have your revised and accurate MS-GIST Program of Study on file in the School Academic Advisor's office.

- b. When you have completed these forms (petition and program of study), set up an appointment to review them with the School Academic Advisor. The advisor will complete a checklist verifying that you have met all School and Institute requirements (indicated below).
 1. All core courses have been successfully completed
 2. All substantive area courses have been successfully completed
 3. Your program of study totals a minimum of 34 semester credit hours
 4. No violations of maximum time to complete a program of study (6 years), pass/fail limits, cross-registration limits, official transfer credit limits or undergraduate course limits occur
- c. Take the checklist, program of study and degree petition and any backup documentation to your faculty advisor. The advisor's signature on the petition itself represents approval of **both forms**.
- d. Return both the signed Program of Study and the Degree Petition forms **to the Academic Advisor**, who will take them to the School Chair, for approval.
- e. Submit the signed petition to the Degree Certification.

The deadline for degree petitions to be received in the Degree Certification Office is in late October for a May graduation date. Check the OSCAR for the specific, "Last day for degree petitions for Master's candidates." *You should be aware that the process can take up to two weeks to fill out the appropriate forms, obtain approvals and signatures, and deliver the materials. Plan ahead – start filling out your paperwork for graduation in early October of your second year.*

B. Academic Standing

Student progress through the School is monitored by the faculty. Unsatisfactory progress toward completion is indicated by failure to maintain a cumulative graduate GPA of 2.7 or above. The graduate GPA for the purpose of this section is the GPA (as computed by the Registrar's Office) derived from all courses taken at Tech applicable to the student's program of study. The student should be aware that incomplete grades, while not entering into the computation of the grade point average, do not indicate successful completion of the required units.

A student not showing normal progress toward the degree or whose cumulative GPA as defined above is less than 2.7 is automatically placed on warning and a "committee on progress" is convened. The committee on progress is composed of the student's advisor and one other faculty member appointed by the Chair. Its task is to assist the student in overcoming academic problems. The student is allowed one semester of warning in which to bring the GPA (as defined above) up to the 2.7 level, or at least to make substantial progress toward this goal, while making normal progress toward the degree.

Typically, the committee will recommend a set of actions that must be met by the student to ensure progress. The Chair will establish an agreement with the student, indicating those actions necessary to assure progress toward a degree and improve the student's performance in their courses. Failure to meet the conditions as set by this agreement shall result in dismissal from the School. (See the Georgia Tech General Catalog for the Institute academic standing regulations.)

C. Conditional Status

Students admitted on "conditional status" must meet the obligations of regularly admitted students and may have additional conditions attached to their admission as well, e.g., the obligation to take remedial course work or to earn a specific set of grades in a particular group of courses in the first semester. Conditionally admitted students who do not satisfy admission conditions within the designated time period are subject to dismissal.

D. Incompletes

Each student should make every effort to complete coursework during the semester of registration. In highly unusual circumstances, however, students may request to take an "Incomplete" in a course. Institute policy states that instructors give "Incompletes" only in exceptional circumstances for non-academic reasons that are beyond the student's control (for example, health reasons, serious family problems, investigation of academic misconduct). If an Incomplete is assigned, the student must remove the Incomplete and the instructor must report the new grade no later than the end of the student's next semester in residence. If a change of grade is not reported by the end of the student's next semester in residence, the Incomplete will automatically become an "F." Note that an Incomplete cannot be assigned to a course offered on a pass/fail basis. In this case the grade automatically becomes a "U" if the professor does not submit an "S" when grades are due. However, it does not affect the student's grade point average. If a student registers again for the course in the subsequent semester and passes it, the internal transcript will show both entries; however, any transcript sent outside the Institute will mask the original "U."

To change a grade that has become an "F," approval by the Instructor, School Chair, and College Dean is required. It is the School's policy that only in exceptional cases will grade changes be approved at this point. Therefore, a student should anticipate that an incomplete removed after the Institute deadline will be assigned a grade of "F."

One final point: It is unwise to submit work necessary to remove an Incomplete just prior to the Institute deadline. If the instructor feels that revisions or additions to this work are necessary, a student could miss the Institute deadline. Sufficient time for grading and refinement should be allowed.

E. Academic Drop/Readmission

Any student who is not enrolled for two or more consecutive semesters must apply for readmission.

Any student in Good Standing who is not enrolled for a single semester will be allowed to enroll without applying for readmission to the Institute. There is no distinction between the semesters of the regular academic year and the summer semester.

A student who is on Academic Warning or Probation who is not enrolled for a single semester will have an automatic hold placed on his or her registration, which must be cleared by the student's major school. For example, a student who is placed on academic warning or probation at the end of a Fall semester and fails to enroll by the close of Phase II registration for the following Spring semester will receive an automatic registration hold. The student's major school must clear this hold before that student can register for the Spring semester. Should the student not register for the Spring semester, then s/he will have to submit a readmission application for the next term for which enrollment is sought.

Any student, except a part-time graduate student, who withdraws during a semester and wishes to return the following semester must complete a readmission application and a petition to the faculty for consideration. Part-time graduate students are required to complete only a readmission application. These documents must be submitted to the registrar before the semester readmission deadline as follows:

Summer Semester	April 1
Fall Semester	July 1
Spring Semester	December 1

F. Grade Changes

Changes in grade are made only if the final course grade was in error. The professor must indicate that there were extenuating circumstances, i.e. beyond the professor's or student's control. No change of grade will be made after the end of the student's next semester in residence.

G. Maximum Number of Hours To Be Enrolled

Unless permitted in writing by the School Chair, no student can register for more than 21 semester credit hours during any given semester. This is also the Institute limit for graduate students. Requests for program overloads must be approved by the School Chair and the Institute Graduate Curriculum Committee.

VII. GRADES AND SCHOLASTIC AVERAGE

A. Grades

1. The letter grades for completed courses used in the calculation of scholastic average are the following:

A:	Four quality points
B:	Three quality points
C:	Two quality points
D:	One quality point; course must be repeated if it is a core course
F:	No quality points

2. The following grades will be used in the cases indicated and will not be used in the calculation of scholastic average:

S: Passing of a course taken under pass-fail or completion of a course in which no letter grade may be assigned.

U: Failure in a course taken under pass-fail or unsatisfactory performance in a course for which no letter grade may be assigned.

V: Assigned when the course has been audited; no credit given; implies no academic achievement on the part of the student and cannot serve as the basis for credit by examination at any future date.

3. The following grades will be used in the cases indicated:

I: Incomplete. Assigned when a student is incomplete in some part of the course for illness or death in the immediate family or is absent from the final examination for illness or death in the immediate family. If the student's record is so poor as to preclude passing, the instructor shall assign the grade of "F" or "U." (Note: registering and repeating a course in which an "I" grade has been assigned will not remove the outstanding "I" grade.) **Institute policy forbids faculty from using the Incomplete as a temporary grade while the student improves work originally demanded by the course. Incompletes are only for students with extenuating nonacademic circumstances.**

W: Dropped the course before the end of the fifth week. This symbol indicates that a student was permitted to withdraw without penalty. Withdrawals without penalty will not be permitted after the fifth week except in cases of hardship as determined by the registrar. Ordinarily, students who withdraw from school and receive all grades of W will not be permitted to re-enroll the next succeeding semester.

B. Dropping and Adding Courses

Through the computer-based registration system, students may now drop a course without any permission or counseling from academic programs or advisors. All students should seek advice and counsel from their faculty advisor and from the School Academic Advisor before dropping a course. Any student who is on a conditional status will be prevented from dropping courses (with a "hold") without the consent of their faculty advisor.

Be sure to check your printed schedule at registration to verify that all courses for which you are registered are ones that you do in fact intend to complete. You are responsible for dropping any unwanted classes. If you do not do so by the drop deadline, you risk receiving a grade of "F" in a course in which you were enrolled but you did not attend or complete.

Students may add a course to their schedule before the end of late registration (which is the end of the first week of classes). **Students should note, then, it is not possible to add courses after the first week of classes.** If you are "shopping" for classes and are not sure what you will finally end up taking, you should make sure you are registered for all of the classes under consideration by the end of the first

week. You can then drop the “extra” courses prior to the “Last Day to Drop Classes” deadline (about 4-5 weeks into the semester).

VIII. DUAL DEGREE PROGRAMS

Students enrolled in a Georgia Tech PhD program may also enroll in the MS-GIST program and count the same courses for both degree programs, with approval of both program directors.

Students who are pursuing any two Master’s degrees at Georgia Tech may double count a maximum of 6 hours of credit for both degrees.

The School of City and Regional Planning also offers an accelerated internal dual degree in which students earn both the MS-GIST degree and the MCRP degree. Students in the dual degree program earn two complementary sets of strong educational credentials, and they graduate in only two years plus one semester rather than the three years required by the two separate degrees. Graduates of the program are prepared for employment in professions related to both geospatial technologies and city planning. The program’s graduates work for a wide-variety of employers including private sector consulting companies, non-profit organizations, and government agencies at every level of government. MCRP/MS-GIST graduates are also well-prepared to pursue Ph.D. work in city and regional planning or geographic information science.

Students in the dual degree will typically complete the program in two years and one semester. This is achieved by counting three 3-credit GIS classes as both (1) required courses in the MS-GIST; and, (2) electives in the MCRP. In addition the CP 6024 course (which is required for both degrees) provides four additional credits that are counted toward both degrees. The program requires a total of 76 credit hours rather than the 89 credit hours required for separate completion of the two degrees. Other than counting 13 credits toward both degrees, students must meet all other program requirements for each separate degree, so graduates receive the full curriculum for both degrees.

Students’ first year will consist of normal coursework for either the MCRP or MS-GIST degree. During students’ second year they will take the initial two semesters of coursework from the alternate program. In the fall semester of the third year students will take the final set of courses for the MCRP degree. In addition, all students will serve a normal summer MCRP internship after taking the initial year of MCRP courses, and in the summer following two semesters of MS-GIST coursework students will take two GIS classes in the summer session. See below for typical programs of study.

Student applications are reviewed by each program independently and students are admitted to the dual degree after being accepted by both programs.

MS-GIST in First Year

Semester/Year	Course Type	Prefix	Number	Course Name	Credits
Fall 1st Year	Required	CP	6581	GIS Programming	3
Fall 1st Year	Required	CP	6531	Introduction to Remote Sensing	3
Fall 1st Year	Required	CP	6591	Professional Seminar	1
Fall 1st Year	Required	CP	6006	Visualization	1
Fall 1st Year	Specialized GIS	CP	6542	Transport & GIS	3
Fall 1st Year	Elective	--	----	Elective or MCRP course	3
Spring 1st Year	Required	CP	6521	Advanced GIS	3
Spring 1st Year	Required	CP	6592	Capstone Preparation	1
Spring 1st Year	Required	CP	6024	Quantitative Computer Methods	4
Spring 1st Year	Specialized GIS	CP	6570	Socioeconomic GIS	3
Spring 1st Year	Elective	--	----	Elective or MCRP course	3
Summer 1st Year	Required	CP	6996	Capstone Project	3
Summer 1st Year	Required	CP	6595	GIS Design and Management	3
Fall 2nd Year	Required	CP	6012	History and Theory of Planning	4
Fall 2nd Year	Required	CP	6025	Advanced Planning Methods	4
Fall 2nd Year	Required	CP	6514	Geographic Information Systems	3
Fall 2nd Year	MCRP Specialization	--	----	MCRP Specialization Course	3
Spring 2nd Year	Required	CP	6016	Growth Management Law	3
Spring 2nd Year	Required	CP	6031	Economic Analysis	3
Spring 2nd Year	MCRP Specialization	--	----	MCRP Specialization Course	3
Spring 2nd Year	MCRP Specialization	--	----	MCRP Specialization Course	3
Spring 2nd Year	Elective	--	----	Elective	3
Summer 2nd Year	Required	--	----	Planning Internship	0
Fall 3rd Year	Required	CP	6052	Applied Planning Studio	4
Fall 3rd Year	Required	CP	8990	Applied Research Paper	4
Fall 3rd Year	MCRP Specialization	--	----	MCRP Specialization Course	3
Fall 3rd Year	Elective	--	----	Elective	2

Total credits (76 required)	76
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MCRP in First Year

Semester/Year	Course Type	Prefix	Number	Course Name	Credits
Fall 1st Year	Required	CP	6012	History and Theory of Planning	4
Fall 1st Year	Required	CP	6025	Advanced Planning Methods	4
Fall 1st Year	Required	CP	6514	Geographic Information Systems	3
Fall 1st Year	MCRP Specialization	--	----	MCRP Specialization Course	3
Spring 1st Year	Required	CP	6024	Quantitative Computer Methods	4
Spring 1st Year	Required	CP	6016	Growth Management Law	3
Spring 1st Year	Required	CP	6031	Economic Analysis	3
Spring 1st Year	MCRP Specialization	--	----	MCRP Specialization Course	3
Spring 1st Year	Elective	--	----	Elective	3
Summer 1st Year	Required	--	----	Planning Internship	0
Fall 2nd Year	Required	CP	6581	GIS Programming	3
Fall 2nd Year	Required	CP	6531	Introduction to Remote Sensing	3
Fall 2nd Year	Required	CP	6591	Professional Seminar	1
Fall 2nd Year	Required	CP	6006	Visualization	1
Fall 2nd Year	Specialized GIS	CP	6542	Transport & GIS	3
Fall 2nd Year	Elective	--	----	Elective or MCRP course	3
Spring 2nd Year	Required	CP	6521	Advanced GIS	3
Spring 2nd Year	Required	CP	6592	Capstone Preparation	1
Spring 2nd Year	Specialized GIS	CP	6570	Socioeconomic GIS	3
Spring 2nd Year	MCRP Specialization	--	----	MCRP Specialization Course	3
Spring 2nd Year	Elective	--	----	Elective or MCRP course	3
Summer 2nd Year	Required	CP	6596	Capstone Project	3
Summer 2nd Year	Required	CP	6595	GIS Design and Management	3
Fall 3rd Year	Required	CP	6052	Applied Planning Studio	4
Fall 3rd Year	Required	CP	8990	Applied Research Paper	4
Fall 3rd Year	MCRP Specialization	--	----	MCRP Specialization Course	3
Fall 3rd Year	Elective	--	----	Elective or MCRP course	2

Total credits (76 required)	76
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IX. INTERNSHIPS

The MS-GIST degree does not require an internship, although students are encouraged to seek a ½ time internship during the summer while taking the two summer three-credit required MS-GIST courses

X. GRADUATE ASSISTANTSHIPS

All graduate assistantships are considered pay for work, not fellowships. Thus, graduate assistants are obligated to work during the same periods as all University employees. The semester is 16 ½ weeks long, and the number of hours required of a 37.5-time assistantship is 15 per week. This results in a work requirement of 247.5 hours per semester (15 hours/week x 16.5 weeks). The student and faculty member (or Co-op employer) arrange the work schedule at the beginning of the semester, according to the expected workflow. A student’s funding support may be discontinued (even mid-semester) if the student fails to perform his/her assigned duties.

In the School of City and Regional Planning, we currently have three different types of funding opportunities for students to receive assistantships. All three types of assistantships result in the same financial benefit for the student: a stipend and tuition remission (student responsible only for fees and the student qualifies for in-state tuition, even if not a Georgia resident). In exchange, the student must work the number of hours per week based on the percentage time appointment. For example, for a 1/3 (.375)-time appointment, the student receives a monthly stipend of \$800.00 and tuition remission to include all of the tuition cost except \$25 and mandatory fees. The student agrees to work for the supervisor for 15 hours per week for the full 16 ½ weeks of the semester.

A. *Types of Graduate Assistantships*

Four different types of funding opportunities and typical work assignments are described below.

1. School-funded Graduate Teaching Assistantships (called “School GTAs”). These resources are made available to the School through the College of Design to be used to support faculty research, teaching activities of the School, and other academic purposes. Oftentimes, the School Chair will use these funds to recruit high quality master’s students to our School. In addition, these funds may be used support a very limited number of continuing students to serve as Graduate Teaching Assistants (GTAs) for specific core courses. One of the members of the faculty of the School serves as the student’s supervisor. This assignment is made at the beginning of the academic year.
2. Faculty-funded Graduate Research Assistantships (called “Research GRAs”). On those occasions when faculty members receive funding to conduct specific research projects, a faculty member may offer funding to incoming or continuing students to assist in that research. The student can expect to work closely with a particular faculty member on a specific project activity during their research GRA. Students may also receive funding from faculty outside City and Regional Planning, through Architecture, Civil Engineering, Facilities, etc. The student reports to the specific faculty member (or his/her designee) as his/her supervisor.

3. GRA Co-operative Student Assistantship (“GRA Co-ops”). In this co-operative arrangement between an employer and Georgia Tech’s School of City and Regional Planning, a student works for an employer outside Georgia Tech on projects in the Atlanta metropolitan area, but the student is funded through Tech and receives the same stipend and tuition benefits as other funded students. The employer designates the student’s supervisor. Some of the types of employers that have participated in this very popular Co-op program are: real estate and development firms, local governments, urban design firms, transportation planning firms, economic development organizations, non-profit community development organizations, non-profit environmental/open space organizations, and many others. Co-op opportunities become available throughout the year and information about these positions is available from the Academic Advisor, not the Institute’s Co-op office. Many times, if the student performs well in a Co-op assignment, the employer may choose to continue the employment with the student throughout their education and, in some cases, after graduation in a permanent position.
4. GRA for another hiring unit at Georgia Tech. Other units at Georgia Tech hire City and Regional Planning students. The hiring paperwork is done by the hiring unit; however, the College of Design should be notified in case the appointment is appropriate for tuition waiver. There are two research centers directed by City and Regional Planning faculty – the Center for Geographic Information Systems and the Center for Quality Growth and Regional Development. Both centers hire typically CRP students. Additionally, the Center for Economic Development Services in the Economic Development Institute, the Georgia Tech Research Institute, Facilities Department, Center for Assistive Technology and Environmental Access, etc., have hired CRP students in the past. Like Co-op opportunities, these become available throughout the academic year.

Typically, students are funded at the .375-time level. The maximum level of graduate assistantship provided to a MS-GIST student (regardless of funding source or assistantship type) is ½-time.

B. Performance Criteria for Graduate Assistants

In determining whether to recommend continued assistance, the faculty supervisor or co-op employer will evaluate performance using the following criteria:

- Promptness and competence of task completion
- Help volunteered when no specific task was assigned
 - General initiative
 - Regular contact with the faculty supervisor
 - Quality of job performance
 - Fulfillment of contractual obligations (i.e., 15 hours of work a week).

These evaluations are conducted each semester and are used in making subsequent offers of assistantships.

C. Minimum Course Load

All assistantships are automatically terminated if a student's enrollment falls below twelve (letter grade or pass/fail) semester credit hours.

Students receiving waivers of out-of-state tuition, and those supported by fellowships or armed forces stipends are required to take a minimum of 12 academic credits as well. Students on visas must also meet the 12 credit minimum requirement.

Because the course-add period ends well before the course drop period, GRAs and GTAs must plan their load very carefully. All graduate assistants must be registered for 12 hours total each semester they are enrolled. Under-enrolled students with GRA appointments will be flagged immediately following the close of registration, and if unresolved, the student will be billed for the difference between the GRA rate and the full tuition based on his/her residency.

D. International Students Tax Withholding Status

All non-U.S. citizens hired by Georgia Tech must complete an Alien Information Form. Completion of this form will provide information necessary to determine the employee's tax withholding status. Contact the Georgia Tech Bursar's Office or International Office for more detailed information and for the form itself.

XI. OTHER SOURCES OF FINANCIAL AID

Financial aid is available to students at Georgia Tech through tuition waivers, scholarships, assistantships, work study, loans, etc. Detailed information concerning scholarships, loans, grants, and the deadlines for each, may be obtained by contacting the Financial Aid Office at 404-894-4160.

There are a number of awards and scholarships available for which Georgia Tech City and Regional Planning students are eligible. Among them are: Regent's Opportunity Scholarship (for in-state minority or women students who can demonstrate financial need), American Planning Association Minority Fellowship, Frederick K. Bell Memorial Fellowship, and Thera Richter Memorial Fellowship, the Urban Land Institute Fellowship, the William F. Kennedy, Jr. GRA Fellowship, and the Glattig-Jackson Fellowships. If you are interested in any of these awards, you should contact the School Academic Advisor or examine the bulletin board in the hallway outside the City and Regional Planning offices.

There is a more complete listing of scholarships and fellowships mostly from outside sources available to students at http://www.gradadmiss.gatech.edu/financial/financial_support.php.

A. Academic Common Market

While the Academic Common Market is not technically a waiver program, it serves the same purpose. If your state of residence is one of 16 southern states (from Maryland to Texas) you may qualify. To be placed on the program you must present or send a letter from the Common Market Coordinator for the higher education board for your home state to the Georgia Tech Enrollment Services Division (<http://www.admiss.gatech.edu/acm/>). This letter must indicate that you have personally been approved for the program, well in advance of your first term. The Graduate Office will coordinate your eligibility for in-state fees with the Bursar's Office.

If your home state has not already approved the MS-GIST Program at Georgia Tech you can appeal to the common market coordinator in that state to add it, based on the lack of availability of a program in the particular specialization you wish to pursue. For more information on this program, visit the website

for Southern Region Education Board (www.sreb.org) and click on the tab marked Academic Common Market at the top of the screen.

B. Regents Opportunity Scholarship Program

The intent of this program is to increase the enrollment of historically disadvantaged and under-represented students in graduate and professional programs offered by institutions in the University System of Georgia. To be eligible to receive funds under this program, the recipient must be a Georgia resident, have a minority classification, and be a full-time student in good standing. The scholarship is renewable for up to three years and is based on financial need and academic performance. Support is generally set at \$5,000 per academic year. Priority is given to prior recipients who continue to meet eligibility criteria. As with tuition waivers, nominations are forwarded to the Associate Vice President for Graduate Studies and Research from the School Chair. Regents Opportunity Scholarship nominations are solicited by the Office of Graduate Studies and Research in early March and decided by June for the following academic year.

C. President's Fellowships

President's Fellowships are offered annually to a select number of highly qualified students who are pursuing advanced degrees at the doctoral level. Selections are based on each student's application, transcripts, biographical sketch, letters of recommendation, and standardized test scores (when required for admission). Awards are generally made in February for entry the following fall semester, the semester in which all new President's Fellows begin their studies. The Office of Graduate Studies and Research serves as coordinator for all President's Fellowships. In the College of Design, the Ph.D. School Chair submits the nomination on behalf of the student's intended major field coordinator.

D. Graduate Student Loans

Students may be eligible to receive student loans from federal or private financial sources. U.S. citizens and permanent residents may be eligible to receive federal student loans that are subsidized. International students may be eligible to receive privately-sponsored student loans. For detailed information about student loans, eligibility, and application processes, please see the website for the Office of Student Financial Planning and Services at: <http://www.finaid.gatech.edu>.

XII. COURSE EVALUATIONS BY STUDENTS

Georgia Tech has made its standard course evaluation forms available on-line through a computer-based system. It is now the responsibility of students to complete course evaluations on-line (or for low enrollment courses, through a paper form distributed by the School Chair). **All students in the School of City and Regional Planning must complete a course evaluation for all courses that they take at Tech.** This should be done during the time period announced for each semester.

Information from these evaluations is used in important ways. For example, the evaluations may inform an instructor about course elements where students feel the instructor is doing particularly well or poorly. The information may also provide insights into ways to improve a course. Evaluations can also be used as one element in assessing a faculty member's overall teaching performance. Therefore, completing these forms are important to students, faculty, and the School Chair.

These forms, however, do not replace the best form of evaluation – a safe, open, and interactive dialogue between students and instructors on a one-on-one basis. There is no substitute for this type of dialogue between teachers and students. Students are encouraged to share their ideas and comments to faculty members, but students should also know that they have an opportunity to provide comments anonymously through the course evaluation process.

XIII. STUDENT REPRESENTATIVES AT FACULTY MEETINGS

Each class of School of City and Regional Planning students will select one representative to attend regular faculty meetings. Student representatives are entitled to participate fully in discussions. Occasionally, it will be necessary for the faculty to go into executive session to discuss personnel or student academic issues, in which case the student representatives will be required to leave the meeting.

XIV. STUDENT APPEALS PROCEDURE

If a student feels that s/he has been dealt with inappropriately or unfairly by the School or a specific faculty member on an academic matter, the student can elect to grieve that action. Students are referred to the grievance process outlined in the **Georgia Tech General Catalog** (see <http://www.catalog.gatech.edu/rules/20>).

XV. STUDENT ACCESS TO PERSONNEL FILES

Students do not have direct access to personnel, student, and other files. A student may request to see his or her own file, except for any recommendation letters that the student waived the right to see. The request to see one's file should be made to the School Chair.

XVI. LIBRARIES AT GEORGIA TECH

The Georgia Tech Library cataloged collections total over 3,600,000 items, including 1,200,000 government documents, 190,000 maps, and 1,500,000 microforms. City and Regional Planning School students are advised to become familiar with the materials and services provided by the Library.

The key to library resources is GTEL, the Georgia Tech Electronic Library (<http://www.library.gatech.edu>). GTEL provides access to GTEC, the Library's online catalog, and other databases, such as Web of Science, which are useful for research. GTEL is also a gateway to Internet resources. GTEL also provides online access to over 150 databases. One database of primary interest to students in the School of City and Regional Planning is the Web of Science, which references many GIS- and planning-related journals. Many journal articles and recent books are available from the library as electronic resources.

The Georgia Tech Library and Information Center, though primarily a scientific-technical library, does include substantial holdings in GIS, urban planning, and related fields, such as public policy.

1. Circulation

The main library lends materials through the Circulation Department, 1st floor, West Building. Faculty, staff and students as well as qualified outside users may borrow materials. Students must present a current ID in order to check out materials. Books may be borrowed for three weeks. They may be renewed if not needed by another borrower, and telephone renewals are accepted if materials are not overdue. Materials will be recalled before their due date if needed by another user. The fine for overdue books is \$0.25 per day per book. A user who loses a book is responsible for replacement costs plus a processing fee. A student owing fines to the Library must clear all obligations before being allowed to register or to graduate. For complete circulation policies, call the Circulation Department at 404-894-4500.

2. Reference Service

Reference service is available on the 1st floor the Library's West Building; in the Information Services Department (404-894-4529), the Special Formats and Maps Department (2nd floor East Building) (404-894-4509) and the former Government Information Department which is now part of Reference/Information Services (2nd floor East Building) (404-894-4519).

3. Information Services Department

This department contains an extensive collection of reference works, abstracts, indexes, encyclopedias, and bibliographies. The collection includes a number of resources, which have application to urban planning and related fields, such as:

Council of Planning Librarians. CPL Bibliography (Z5942.C62X)
Sage Urban Studies Abstracts (HT51.S24)
Public Affairs Information Service Bulletin (PAIS) (Z7163.P9)*
Social Sciences Index (A13.S6X)**
Social Sciences Citation Index (Z7161.S6X)

*Also available online through GTEL or GALILEO

**Also available online as "Social Science Abstracts" on GALILEO

The Information Services Department staff will be glad to assist you in using these and other reference materials. Most of the collection does not circulate.

The Library is also a depository for publications issued by the U.S. Government. The collection is an important source of information for City and Regional Planning students. It includes both print and electronic resources from the U.S. Census Bureau and other government agencies. The Library also has a large collection of maps issued by the U.S. Defense Mapping Agency, Topographic and Aerospace Centers, the U.S. Geological Survey, and the U.S. National Ocean Survey. The map collection contains a series of Historic Urban Plans (facsimiles of historic city plans and views), which are of special interest to City and Regional Planning students.

4. Technical Resources

This department houses the Library's extensive collection of microforms, including research reports on microfiche issued by the National Technical Information Service. Numerous NTIS reports have application to GIS, urban planning, transportation, and related fields. The Library's collections of patents and standards are also housed in Technical Resources.

5. Copying

Photocopying services, including microfilm and microfiche duplication, are offered in the Circulation Department. Rates and photocards are available at the Main Library. All copying is subject to the provisions of copyright law. For additional information call 404-894-4500 (Circulation Department).

6. Lockers and Carrels

Lockers are available for assignment to students, and a few study carrels are available to graduate students engaged in thesis or dissertation preparation. The use of lockers and carrels is subject to established regulations. Specific information is available at the Circulation Desk (1st floor East Building), 404-894-4500.

7. University Center/University System Libraries

The University Center is a consortium of academic institutions in the Atlanta-Athens area. The library resources of these institutions are available for use by Georgia Tech students. You may check out books at Georgia State, Emory, and the University of Georgia with your current Georgia Tech ID. If the book is available at another University System or the University Center Library (i.e., Southern Tech, Kennesaw State, or Agnes Scott) obtain an "**Interlibrary Use Card**" (ILU Card), which will allow you to check books out at the designated library.

8. Interlibrary Loan

If material needed for graduate research is not owned by the Georgia Tech Library, the Information Delivery/Interlibrary Loan Department on the 2nd floor, East Building (404-894-4511), can attempt to locate the material and borrow it from another library. This may involve a fee. Interlibrary loan requests may also be submitted at the Reference Desk (1st Floor, West Building, 404-894-4529).

XVII. COMPUTING FACILITIES

A. General

Planning students will have several computing facilities available to them.

As part of the College of Design, students in the School of City and Regional Planning will primarily use the two computer labs on the third floor of the East Architecture building. The main lab is equipped with approximately forty high quality PC-based computers connected to networked laser printers. Students will be assigned a login and password for access to the College server where they will have allocated space for file storage. Additionally, many of the computer stations are equipped with disk drives and CD RW drives for additional data storage needs. These computers have spreadsheet, database, statistical, computer aided design, and geographic information systems (GIS) software, and run using the Windows platform. A second lab contains a set of additional computers. All computers in the labs are connected to the College network file-servers and the Georgia Tech campus network. You should make yourself aware of the available software early on in your degree program.

The City and Regional Planning Commons is open to students 24 hours per day and 7 days a week. It includes five high quality computers, a high-speed laser printer, and full Internet access. Wireless internet access is available throughout the East and West Architecture buildings and throughout campus.

If you have specific questions or concerns regarding the purchase of computer equipment, address them to the College's help desk at helpdesk@coa.gatech.edu.

B. Software Copyrights

It is important to keep in mind that essentially all computer software is copyrighted. Under no conditions are users of any of the Institute's, College's, or School's facilities allowed to copy any software program or CD. Evidence that a particular user has tampered with the software copy protection may result in that user becoming ineligible to use the facility again. A student may also be subject to sanctions under the Student Conduct Code. Furthermore, certain software diskettes and CDs have internal protection features, such that they are damaged when an attempt is made to copy them. Anyone damaging a software diskette or CD will be required to pay for its replacement.

C. MS-GIST online materials

MS-GIST materials posted online are available at <http://pwp.gatech.edu/msgist>

XVIII. STUDENT USE OF EQUIPMENT, SUPPLIES, AND WORD PROCESSING

A. Word Processing

School staff will not type student papers or correspondence. Students must complete their own word processing or contract independently with someone to do so.

B. Telephone

In cases of emergency only, the School Office can accept incoming calls for students. The emergency number is: 404-894-2351. Students may not use any other School telephones, other than the phone in the CP studio. Exemptions may be granted by faculty members who allow specific students to have access to their personal telephones for specific projects. When doing so, either the faculty member must be present or have made arrangements in advance for the student to have access the office. School staff is not allowed to open faculty offices for any students without prior approval of faculty.

C. Supplies

Students must provide their own supplies for class work. The supply area contains supplies for School and faculty use only – **not for student use**. Research and teaching assistants, who use supplies directly related to their employment, should obtain them from their faculty supervisor.

Stationery, envelopes, and related items are exclusively for official program purposes, and are not for personal use. Misuse of program supplies or resources may result in disciplinary action against the student.

D. Letterhead

Students may use the School's letterhead stationery only for correspondence related officially to School business. A faculty member must read the correspondence before it is sent out on School letterhead; advance permission alone is not sufficient. Misuse of letterhead may result in disciplinary action against the student.

E. Copiers and Fax Machine

Students may only use the departmental copiers for their research assistantship work as authorized by their faculty supervisor. There are self-service copiers available for student use for a nominal fee at the OIT Printing and Copying Services and both libraries. The OIT center also has a fax service. There is a self-service fax machine in the Student Center as well.

F. Program Facilities

The City and Regional Planning faculty area (Room 204) is closed after 5:00 p.m. each business day. School staff, faculty, and students are not allowed to open faculty offices or leave the area unlocked *under any circumstances*.

The City and Regional Planning studio is intended for City and Regional Planning students' use only. The City and Regional Planning Studio and the computers in it are accessible 24 hours a day, 7 days a week. Students must memorize the combination for the lock and not allow it to be abused. Students are responsible for securing it when it is not occupied. **Students are also responsible for keeping the studio clean, tidy, and a site appropriate for professional work.** The studio can be scheduled for meetings called by students or planning student groups. Classes other than planning labs or meetings not involving planning student organizations should not be scheduled in the studio at any time.

Room 205 Architecture – East is intended for use by City & Regional Planning Studio classes. It may also be used for school meetings and other meetings approved by the School Chair. The space must be reserved in advance through the School's Administrative Coordinator.

XIX. PERSONAL BELONGINGS AND SAFETY

The School of City and Regional Planning does not accept responsibility for the loss of items or for items left unattended. Because of the high cost of books and calculators, students are urged to exercise care in where they place these items and their safety.

Georgia Tech is an urban campus and, at times, has been a target for thefts, muggings, and rapes. Students are warned to use care, especially at night, on weekends, and during holidays. Walking through some areas of campus alone and/or at night is a very poor idea. **Always use the buddy system after dark.** Campus Security also provides escort service to your car after dark, and the Stingerette buses operate on an on-call basis Monday-Sunday 6:00 p.m. – 7:00 a.m. (during normal operation). Service requests are taken until 6:30 a.m. This is particularly helpful to residents of Home Park, who have door-to-door service. This is available by calling 5-7433 from on campus or 404-385-RIDE (7433) from off campus.

For more info. visit http://www.parking.gatech.edu/transportation/2_stingerette/index.php.

Security systems have been installed in the East and West Architecture buildings. These systems require the use of “Buzz Cards” for entry into the buildings after hours and over the weekends. Please make sure you bring your Buzz Card with you if you come to the building at these times. **At no time should a City and Regional Planning student prop open a locked building door or permit access to the building to someone else.** In addition, there are several security cameras located throughout the building. Do not let the presence of these devices reduce your level of concern over your own safety and that of others. Always be careful, and please remember that safety is everyone’s business.

XX. SMOKING POLICY

It is the policy of the Institute that smoking of all types is prohibited on campus.

XXI. ACADEMIC AND PROFESSIONAL WRITING GUIDE

The GIS professions place a premium on effective writing. Professionals persuade best when they communicate clearly. For this reason, the School of City and Regional Planning strongly encourages quality and professionalism in writing throughout a student’s education. The SCARP Writing Guide outlines Georgia Tech’s academic honesty policy and provides a primer on effective writing skills for professionals.

Proper Citation and Attribution

Upon admission to Georgia Tech, all students are expected to meet the standards set out in the Georgia Institute of Technology Academic Honor Code. As explained in the Honor Code:

“Students are expected to act according to the highest ethical standards. The immediate objective of an Honor Code is to prevent any students from gaining an unfair advantage over other students through academic misconduct. Academic misconduct is any act that does or could improperly distort student grades or other student academic records. Such acts include but need not be limited to the following: **Submission of material that is wholly or substantially identical to that created or published by another person or persons, without adequate credit notations indicating authorship (plagiarism)**” (Georgia Institute of Technology 2010).

The Council of Writing Program Administrators defines plagiarism as an act that “occurs when a writer deliberately uses someone else’s language, ideas, or other original material without acknowledging its source” (WPA 2003). It can occur accidentally by insufficiently citing an original author’s words or ideas. More blatant acts involve submitting another’s words or ideas as one’s own. Importantly, both instances – inadvertent and intentional use of another’s material without attribution – constitute plagiarism. Students must take great care, therefore, to avoid the use of another’s ideas or writing without proper attribution.

Incorporating others' work in support of one's own original thought is not improper, but it must be incorporated correctly and with proper citations. Two ways to use others' work are paraphrasing and quotations.

Chicago Manual of Style: Advice on Paraphrasing and Quotations

PARAPHRASING

Paraphrasing takes information and ideas and puts them into other words. Used correctly, paraphrasing is an important tool for clarifying and defending personal statements. For example, the statement *governments may not seize private property for public use without first providing fair compensation to property owners* is a paraphrasing of the "takings clause" of the 5th Amendment to the U.S. Constitution ("nor shall private property be taken for public use, without just compensation" (U.S. Const., amend V).

QUOTATIONS

Quotations are a direct use of another's words. The Chicago Manual of Style quotes Jacques Barzun and Henry F. Graff: "Quoting other writers and citing the places where their words are to be found are by now such common practices that it is pardonable to look upon the habit as natural, not to say instinctive. It is of course nothing of the kind, but a very sophisticated act, peculiar to a civilization that uses printed books, believes in evidence, and makes a point of assigning credit or blame in a detailed, verifiable way" (Chicago Manual of Style 2003, sec 11.2). It is important to note that, when used, quotations should not make up the bulk of the text but be interspersed with original content.

PARAPHRASING V. QUOTATIONS

Paraphrasing and direct quotations of others are both effective ways to support a personal argument; however, one must decide which approach is more useful. Overuse of quotations with little personal annotation can cause distraction or simple skipping over of text by the reader.

UNNECESSARY ACKNOWLEDGEMENT

Commonly known facts, proverbs or other familiar expressions can be used without quotations or citations unless taken directly from a source. For example, the statement that Atlanta is among the most populous metropolitan regions in the country is a commonly known fact, and need not be cited. The statement that Atlanta is the 9th most populous metropolitan region in the country is a specific statistic that is not commonly known, and thus should reference the source of information (U.S. Census Bureau 2009).

Citation Styles

In order to avoid plagiarism and other forms of written academic dishonesty, it is necessary to utilize a standard writing style such as the Chicago Manual of Style, Modern Language Association (MLA) Style, or American Psychological Association (APA) Style. Each provides a distinct method for citing outside information and properly crediting sources. Preference for a style differs between disciplines, professors, journals, etc. **Unless otherwise indicated by an instructor, the preferred style for written work in the School of City and Regional Planning is the Chicago Manual of Style, fifteenth edition, Author-Date Reference. This is also the chosen style for the *Journal of Planning Education and Research*.**

Citations are generally found in two locations of a research document. First, when paraphrasing, including a direct quotation, or citing a statistic from another source, an “in-text” parenthetical citation must follow the sentence including the ideas, words, or statistics of the source. **An in-text citation should always be placed at the end of the sentence including the referenced material and before the terminal punctuation (i.e., period, question mark, etc.).**

Here’s an example:

A study of liquefied natural gas projects found the Mare Island Energy Project to cost \$1.5 billion to complete (Boudet and Ortolano 2010, 8).

In this example, a citation is required due to the fact that a specific statistic is included in the sentence. Note that the in-text citation is included at the end of the sentence and before the terminal punctuation. In this instance, a page number is included to highlight the page of the journal article on which the specific statistic is found. A page number similarly must be included in a parenthetical citation when using a direct quotation. In instances of paraphrasing another’s ideas in which no specific statistic is included, no page number is needed.

The second form of citation is the full citation that is included in a bibliography or reference list at the end of a research document. **Note that citations should not be included as footnotes unless specifically requested by an instructor.**

What follows is a list of citation styles, both reference list and in-text form, based on source type. The *Chicago Manual of Style Citation Guide* is an online resource offering a more extensive list. In the first case, examples are provided with and without a page number reference. Note that a similar convention follows for all in-text reference styles.

Journal Article

Boudet, Hilary S. and Leonard Ortolano. 2010. A Tale of Two Sitings: Contentious Politics in Liquefied Natural Gas Facility Siting in California. *Journal of Planning Education and Research* 30(1): 5-21.

In this example, the periodical volume is 30 and the issue number is 1. The page numbers of the article are included at the end.

(Boudet and Ortolano 2010)

(Boudet and Ortolano 2010, 6)

Book

Jacobs, Jane. 1961. *The Death and Life of Great American Cities*. New York: Random House.

(Jacobs 1961)

Book, edited volume

Campbell, Scott and Susan S. Fainstein, eds. 2003. *Readings in Planning Theory*. Malden, MA: Blackwell Publishing.

(Campbell 2003)

Chapter of edited volume

Lindbloom, Charles. 2003. The Science of "Muddling Through". In *Readings in Planning Theory*, ed. Scott Campbell and Susan S. Fainstein, 196-209. Malden, MA: Blackwell Publishing.

(Lindbloom 2003)

Court Case

Court cases should be cited within the text and do not have to appear in the reference list. Such as:

In *Euclid v. Ambler Realty Company* (272 U.S. 365 (1926)), the court ruled that...

Interview

Personal correspondence should be included as an in-text citation only as follows:

Stiftel, Bruce. Interviewed by Matt Stevens. September 2, 2009.

Published or broadcast interviews should be cited both in-text and within a reference list as follows:

Norris, Michele. "Michele Norris on Race, And 'The Grace Of Silence.'" by Steve Inskeep. *NPR*. September 20, 2010, <http://www.npr.org/templates/story/story.php?storyId=129933195&ps=cprs>

(Norris 2010)

Website

Citations should include as much of the following as possible: title or a description of the page, the author of the content (if any), the owner or sponsor of the site, and a URL. Also include a publication date or date of revision or modification; if no such date can be determined, include an access date.

APA. 2010. "Planning Student Organizations." American Planning Association. Accessed September 12, 2010. <http://planning.org/students/psa/index.htm>.

(APA 2010)

Primer on Effective Writing

Beyond proper citation and acknowledgements, eloquent writing aids both the author and the reader. Several books and resources have been published to address key elements of written style. The *Elements of Style*, written by William Strunk Jr. and E. B White, was published in 1918 and is still a prescriptive American English style guide. The book is small, easy to read, and comprised of "elementary rules of usage," "elementary principles of composition," a "few matters of form," and a list of "commonly misspelled words." What follow are excerpts of the list of Rules of Usage and Principles of Composition, augmented in areas with additional explanation.

Strunk, William and E.B. White. 1959. *The Elements of Style*. New York: Macmillan.

Elementary Rules of Usage

1. Form the possessive singular of nouns with 's

Whenever using a possessive singular noun, 's is the appropriate addition:

Charles's friend, Burn's poem, or the witch's malice

2. In a series of three or more terms with a single conjunction, use a comma after each term except the last.

Examples:

red, white, and blue

Honest, energetic, but headstrong

He opened the letter, read it, and made note of its content

In the names of business firms, the last comma is omitted:

Brown, Shipley and Company

The abbreviation *etc.*, even if only a single term comes before it, is always preceded by a comma.

3. Enclose parenthetical expressions between commas.

The best way to see a country, unless you are pressed for time, is to travel on foot.

This rule is difficult to apply; it is frequently hard to decide whether a single word, such as "however," or a brief phrase, is or is not parenthetical. As a general rule of thumb, a parenthetical expression is a word or phrase that, when removed from the sentence, does not substantially change the structure or meaning of the sentence. The following two sentences provide a clear example of a parenthetical expression:

Jack thought Melvin should have his head examined.

Jack, thought Melvin, should have his head examined.

In the first example, the removal of the phrase "thought Melvin" would change the fundamental meaning of the sentence. In the second sentence, the phrase "thought Melvin" is parenthetical to the core idea that Jack is not entirely together mentally. In this instance, the phrase "thought Melvin" should be set off from the rest of the sentence with commas.

Other examples of parenthetical expressions include clauses introduced by "where" or

“when.”

In 1769, when Napoleon was born, Corsica had but recently been acquired by France. Nether Stowey, where Coleridge wrote *The Rime of the Ancient Mariner*, is a few miles from Bridgewater.

If a parenthetical expression is preceded by a conjunction, place the first comma before the conjunction, not after it.

He saw us coming, and unaware that we had learned of his treachery, greeted us with a smile.

4. Place a comma before *and* or *but* introducing an independent clause. An independent clause is a clause that itself forms a complete sentence (with subject and predicate).

The early records of the city have disappeared, and the story of its first years can no longer be reconstructed.

The situation is perilous, but there is still once chance of escape.

Sentences of this type, isolated from their context, may seem to be in need of rewriting. As they make complete sense when the comma is reached, the second clause has the appearance of an after-thought. Further, *and* is the least specific of connectives. Used between independent clauses, it indicates only that a relation exists between them without defining that relation. In the example above, the relation is that of cause and result. The two sentences might be rewritten:

As the early records of the city have disappeared, the story of its first years can no longer be reconstructed.

Although the situation is perilous, there is still one chance of escape.

5. Use a semicolon to join two or more independent clauses without a conjunction (not a comma).

If two or more clauses, grammatically complete and not joined by a conjunction, are to form a single compound sentence, the proper mark of punctuation is a semicolon.

Stevenson’s romances are entertaining; they are full of exciting adventures.

It is nearly half past five; we cannot reach town before dark.

It is of course equally correct to write the above as two sentences each, replacing the semicolons by periods.

Stevenson’s romances are entertaining. They are full of exciting adventures.

It is nearly half past five. We cannot reach town before dark.

If a conjunction is inserted, the proper mark is a comma.

Stevenson's romances are entertaining, for they are full of exciting adventures.

It is nearly half past five, and we cannot reach town before dark.

6. Do not break sentences in two.

In other words, do not use periods in place of commas.

I met them on a Cunard liner several years ago. Coming home from Liverpool to New York.

He was an interesting talker. A man who had traveled all over the world, and lived in half a dozen countries.

In both examples, the first period should be replaced by a comma, and the following word begun with a small letter.

Elementary Principles of Composition

1. Avoid excessively long paragraphs. Make the paragraph the unit of composition, with one paragraph to each topic.

If the subject on which you are writing is of slight extent, or if you intend to treat it very briefly, there may be no need of subdividing it into topics. Thus a brief description, a brief summary of a literary work, a brief account of a single incident, a narrative merely outlining an action, the setting forth of a single idea, any one of these is best written in a single paragraph. After the paragraph has been written, it should be examined to see whether subdivision will not improve it.

As a rule, single sentences should not be written or printed as paragraphs. An exception may be made of sentences of transition, indicating the relation between the parts of an exposition or argument.

In dialogue, each speech, even if only a single word, is a paragraph by itself; that is, a new paragraph begins with each change of speaker. The application of this rule, when dialogue and narrative are combined, is best learned from examples in well-printed works of fiction.

2. As a rule, begin each paragraph with a topic sentence; end it in conformity with the beginning.

Again, the object is to aid the reader. The practice here recommended enables the reader to discover the purpose of each paragraph as she begins to read it, and to retain the purpose in mind as she ends it. For this reason, the most generally useful kind of paragraph, particularly

in exposition and argument, is that in which:

- A. The topic sentence comes at or near the beginning;
- B. The succeeding sentences explain or establish or develop the statement made in the topic sentence; and
- C. The final sentence either emphasizes the thought of the topic sentence or states some important consequence.

Ending with a digression, or with an unimportant detail, is particularly to be avoided.

If the paragraph forms part of a larger composition, its relation to what precedes, or its function as a part of the whole, may need to be expressed. This can sometimes be done by a mere word or phrase in the topic sentence. Sometimes, however, it is expedient to precede the topic sentence by one or more sentences of introduction or transition. If more than one such sentence is required, it is generally better to set apart the transitional sentences as a separate paragraph.

According to the writer's purpose, he may as indicated above relate the body of the paragraph to the topic sentence in one or more of several different ways. He may make the meaning of the topic sentence clearer by restating it in other forms, by defining its terms, by denying the converse, by giving illustrations or specific instances; he may establish it by proofs; or he may develop it by showing its implications and consequences. In a long paragraph, he may carry out several of these processes.

3. Use the active voice.

The active voice is usually more direct and vigorous than the passive:

I will always remember my first visit to Boston.

This is much better than:

My first visit to Boston will always be remembered by me.

The latter sentence is less direct, less bold, and less concise. If the writer tries to make it more concise by omitting "by me,"

My first visit to Boston will always be remembered.

It becomes indefinite: is it the writer, or some person undisclosed, or the world at large, that will always remember this visit?

This rule does not, of course, mean that the writer should entirely discard the passive voice, which is frequently convenient and sometime necessary.

The dramatists of the Restoration are little esteemed today.

Modern readers have little esteem for the dramatists of the Restoration.

The first would be the right form in a paragraph on the dramatists of the Restoration; the second, in a paragraph on the tastes of modern readers. The need of making a particular word the subject of the sentence will often, as in these examples, determine which voice is to be used.

The habitual use of the active voice, however, makes for forcible writing. This is true not only in narrative principally concerned with action, but in writing of any kind. As you mature as a writer, your sense of when to employ the passive voice will further develop.

4. Put statements in positive form.

Make definite assertions. Avoid tame, colorless, hesitating, non-committal language.

He was not very often on time.	He usually came late.
He did not think that studying Latin was much use.	He thought the study of Latin useless.
The Taming of the Shrew is rather weak in spots. Shakespeare does not portray Katharine as a very admirable character, nor does Bianca remain long in memory as an important character in Shakespeare's works	The women in The Taming of the Shrew are unattractive. Katharine is disagreeable, Bianca insignificant.

The last example, before correction, is indefinite as well as negative. The corrected version, consequently, is simply a guess at the writer's intention.

All three examples show the weakness inherent in the word "not." Consciously or unconsciously, the reader is dissatisfied with being told only what is not; he wishes to be told what is. Hence, as a rule, it is better to express a negative in positive form.

Not honest	Dishonest
Not important	Trifling
Did not remember	Forgot
Did not pay any attention to	Ignored
Did not have much confidence in	Distrusted

Negative words other than *not* are usually strong:

The sun never sets upon the British flag.

5. Omit needless words.

Vigorous writing is concise. A sentence should contain no unnecessary words, a paragraph no unnecessary sentences, for the same reason that a drawing should have no unnecessary

lines and a machine no unnecessary parts. This requires not that the writer make all his sentences short, or that he avoid all detail and treat his subjects only in outline, but that every word tell.

Many expressions in common use violate this principle:

the question as to whether	whether (the question whether)
there is no doubt but that	no doubt (doubtless)
used for fuel purposes	used for fuel
He is a man who	He
In a hasty manner	Hastily
This is a subject which	This subject
His story is a strange one.	His story is strange.

In particular, the expression *the fact that* should be revised out of every sentence in which it occurs.

Owing to the fact that	Since (because)
In spite of the fact that	Though (although)
Call your attention to the fact that	Remind you (notify you)
I was unaware of the fact that	I was unaware that (did not know)
The fact that he had not succeeded	His failure
The fact that I had arrived	My arrival

Who is, which was, and the like are often superfluous.

His brother, who is a member of the same firm	His brother, a member of the same firm
Trafalgar, which was Nelson's last battle	Trafalgar, Nelson's last battle

A common violation of conciseness is the presentation of a single complex idea, step by step, in a series of sentences which might to advantage be combined into one.

Macbeth was very ambitious. This led him to wish to become king of Scotland. The witches told him that this wish of his would come true. The king of Scotland at this time was Duncan. Encouraged by his wife, Macbeth murdered Duncan. He was thus enabled to succeed Duncan as king. (55 words.)	Encouraged by his wife, Macbeth achieved his ambition and realized the prediction of the witches by murdering Duncan and becoming king of Scotland in his place. (26 words.)
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6. Avoid a succession of loose sentences.

This rule refers especially to loose sentences of a particular type, those consisting of two co-

ordinate clauses, the second introduced by a conjunction. Although single sentences of this type may be unexceptionable, a series soon becomes monotonous and tedious.

An unskillful writer will sometimes construct a whole paragraph of sentences of this kind, using as connectives *and*, *but*, and less frequently, *who*, *which*, *when*, *where*, and *while*.

The third concert of the subscription series was given last evening, and a large audience was in attendance. Mr. Edward Appleton was the soloist, and the Boston Symphony Orchestra furnished the instrumental music. The former showed himself to be an artist of the first rank, while the latter proved itself fully deserving of its high reputation. The interest aroused by the series has been very gratifying to the Committee, and it is planned to give a similar series annually hereafter. The fourth concert will be given on Tuesday, May 10, when an equally attractive program will be presented

Apart from its triteness and emptiness, the paragraph above is bad because of the structure of its sentences, with their mechanical symmetry and sing-song.

If the writer finds that he has written a series of sentences of the type described, he should recast enough of them to remove the monotony, replacing them by simple sentences, by sentences of two clauses joined by a semicolon, by periodic sentences of two clauses, by sentences, loose or periodic, of three clauses—whichever best represent the real relations of the thought.

7. Make use of parallel construction in sentence structure.

This principle, that of parallel construction, requires that expressions of similar content and function should be outwardly similar. The likeness of form enables the reader to recognize more readily the likeness of content and function.

The unskillful writer often violates this principle, from a mistaken belief that he should constantly vary the form of his expressions. It is true that in repeating a statement in order to emphasize it he may have need to vary its form.

Formerly, science was <i>taught</i> by the textbook method, while now the laboratory method is <i>employed</i> .	Formerly, science was <i>taught</i> by the textbook method; now it is <i>taught</i> by the laboratory method.
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The left-hand version gives the impression that the writer is undecided or timid; he seems unable or afraid to choose one form of expression and hold to it. The right-hand version shows that the writer has at least made his choice and abided by it.

By this principle, an article or a preposition applying to all the members of a series must either be used only before the first term or else be repeated before each term.

<i>The</i> French, <i>the</i> Italians, Spanish, and Portuguese	<i>The</i> French, <i>the</i> Italians, <i>the</i> Spanish, and <i>the</i> Portuguese
<i>In</i> spring, summer, or <i>in</i> winter	In spring, summer, or winter (<i>In</i> spring, <i>in</i>

	summer, or <i>in winter</i>)
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Correlative expressions (both, and; not, but; not only, but also; either, or; first, second, third; and the like) should be followed by the same grammatical construction. Many violations of this rule can be corrected by rearranging the sentence.

It was both a long ceremony and very tedious.	The ceremony was both long and tedious.
A time not for words, but action	A time not for words, but for action
Either you must grant his request or incur his ill will.	You must either grant his request or incur his ill will.
My objections are, first, the injustice of the measure; second, that it is unconstitutional.	My objections are, first, that the measure is unjust; second, that it is unconstitutional.

8. Keep related words together.

The position of the words in a sentence is the principal means of showing their relationship. The writer must therefore, so far as possible, bring together the words, and groups of words, that are related in thought, and keep apart those which are not so related.

The subject of a sentence and the principal verb should not, as a rule, be separated by a phrase or clause that can be transferred to the beginning.

Wordsworth, in the fifth book of <i>The Excursion</i> , gives a minute description of this church.	In the fifth book of <i>The Excursion</i> , Wordsworth gives a minute description of this church.
Cast iron, when treated in a Bessemer converter, is changed into steel.	By treatment in a Bessemer converter, cast iron is changed into steel.

9. Place the emphatic words of a sentence at the end.

The proper place for the word, or group of words, which the writer desires to make most prominent is usually the end of the sentence.

Humanity has hardly advanced in fortitude since that time, though it has advanced in many other ways.	Humanity, since that time, has advanced in many other ways, but it has hardly advanced in fortitude.
This steel is principally used for making razors, because of its hardness.	Because of its hardness, this steel is principally used in making razors.

10. Avoid "weasel words".

You are responsible for what you say whether or not your conclusions are suspended from probably's, seems', might's, is not inconsistent with's, and similar rigging, but if you weaken the connections between your ideas by using string instead of steel, your whole argument looks wobbly. If it is wobbly, you have a problem words won't solve. If it isn't, why make it look bad?

11. Avoiding bias in language.

Practicing planners work extensively with diverse populations. To communicate effectively to these audiences, the language of planners needs to be respectful of the diversity of its readers. Further, it should, as the American Psychological Association writes, “be free of implied or irrelevant evaluation of the group or groups being studied.” Because of the cultural biases inherent in the evolution of the language we use today, language poses particular difficulties in communicating respectfully and effectively with regards to gender, race, ethnicity, age, disability and sexual preference.

Consider the issue of gender equity. The political purpose that motivates *his/her*, *s/he*, and the like is widely supported. References to *he* and *him* to refer generally to males and females, provide neither the respect they deserve. However, no amount of good will can make a singular antecedent take a plural pronoun (“Will Passenger Smith please make *themselves* known to the flight attendant?”), or change the fact that language is a spoken medium of which writing is a recording. Because *his/her* is unsayable, it’s not really language.

Effective writers will seek to make precise language an ally of right thinking, not its enemy. Writers can frequently use gender-neutral language by restructuring sentences to avoid the use of gender-specific pronouns, such as *he* and *she*. These pronouns are best used when referring to a specific individual or set of individuals. If you cannot avoid the use of gender-specific words, try to use them to increase clarity, and to emphasize inclusiveness, as in:

A mayor may sometimes want his or her police commissioner to keep his or her name out of the news.

A number of guidelines to avoiding bias in writing effectively with regards to gender, race, ethnicity, age, disability and sexual orientation are available. A particularly thorough one is found in *the Publication Manual of the American Psychological Association (1994)*, which we quote from below:

You can test your writing for implied evaluation by reading it while (a) substituting your own group for the group or groups you are discussing or (b) imagining you are a member of the group you are discussing (Maggio, 1991). If you feel excluded or offended, your material needs further revision. Another suggestion is to ask people from that group to read your material and give you candid feedback. (p. 46.)

12. Be conscious of common errors.

Spelling errors and typing mistakes are of no intellectual importance, though they distract the reader and should be combed out. But these errors, as well as errors of style, tend to reduce the intellectual merit of your work in the eyes of the reader. Problems include

- the use of considerable to mean many, much, etc.
- confusion between who and whom, or that and which
- loose references and dangling modifiers

Additional Sources and Citations for Guide

Chicago Manual of Style Citation Guide

http://www.chicagomanualofstyle.org/tools_citationguide.html

Georgia Institute of Technology. 2010. "The Honor Code." Accessed September 12, 2010.

<http://www.honor.gatech.edu/plugins/content/index.php?id=9>.

Glossary of English Grammar Terms

<http://www.usingenglish.com/glossary.html>

Purdue Writing Center

<http://owl.english.purdue.edu/owl/resource/589/01/>

Stilman, A. 1992 *Grammatically Correct*. Cincinnati: Writer's Digest Books.

Strunk, William and E.B. White. 1959. *The Elements of Style*. New York: Macmillan.

The Chicago Manual of Style. 15th ed. Chicago: University of Chicago Press, 2003.

The Council of Writing Program Administrators. January 2003. "Defining and Avoiding Plagiarism: The WPA Statement on Best Practices." Accessed September 12, 2010.

<http://www.wpacouncil.org/positions/WPAplagiarism.pdf>.

UC Berkeley Library Citation Guide

<http://www.lib.berkeley.edu/instruct/guides/citations.html>

United States Census Bureau. 2009. *2009 Population Estimates: Cumulative Estimates of Population Change for Metropolitan Statistical Areas and Rankings: April 1, 2000 to July 1, 2009*. Accessed September 12, 2010. <http://www.census.gov/popest/metro/CBSA-est2009-pop-chg.html>.

Writing Program Websites

<http://www.wpacouncil.org/writingprograms/index.html>

12 Common Errors, An Editors Checklist – University of Wisconsin

<http://writing.wisc.edu/Handbook/CommonErrors.html>

Graduate Studies Writing Program at Georgia Tech

The Language Institute at Georgia Tech offers some limited assistance to native English speakers in the form of writing classes in which students can enroll while attending the MS-GIST School. There will be an additional expense for these classes. For more information on these classes go to the Language Institute Webpage at <http://www.esl.gatech.edu/li/servlet/LIHome>

The Language Institute also now offers low-cost language and communication "tune-up" short courses for new international students in the two weeks before the fall semester starts. They are intended to

help students acclimate to the American classroom and give them some pointers on what language skills they need to develop.

Center for Enhancement in Teaching and Learning (CETL)

CETL offers several courses to assist students in enhancing their English teaching and writing skills.

Frequent offerings include:

8000 Graduate Teaching Assistant Preparation (1 credit)

(See Schedule of Classes at <https://oscar.gatech.edu> for available sections)

This course is an introduction to the procedural information and practical skills needed to be an effective graduate teaching assistant. NOTE: This section is intended for those graduate students who are not enrolled in a department-specific section. Permits for students in department-specific sections will be automatically requested by their departments.

8712 STEP seminar (1 credit)

8721 Academic Writing for Graduate Students (1 credit)

Through examination of writing samples, practice, and working in small groups, students learn techniques for enhancing proposal, thesis, and dissertation preparation as well as methods for evaluating writing as future instructors and thesis directors. This course is designed for students who are already writing and communicating fluently in English but who would like to work on specific strategies for written and oral academic communication (e.g., proposals, theses, dissertations, oral defenses, refereed publications, committee meetings, and other professional communication scenarios). NOTE: THIS CLASS IS INTENDED ONLY FOR FLUENT SPEAKERS AND WRITERS OF ENGLISH. A BRIEF WRITING SAMPLE WILL BE REQUESTED.

Appendix: Possible MS-GIST elective courses within the School of City and Regional Planning

Students in the MCRP degree program select one of six traditional Master of City and Regional Planning specializations. Most specializations are structured to require two foundational courses and two courses drawn from a broader listing of closely-related courses. By taking the two foundational courses in a specialization, MS-GIST students will be able to acquire a good overview of a particular substantive area. Descriptions of each MCRP specialization and suggested courses are listed below.

A. *Economic Development*

Economic development planning seeks to build a stable economic base that preserves and raises a community or region's standard of living by developing its human and physical infrastructure in a sustainable manner. In so doing, economic development planners address issues such as the following:

- How can we improve the quality of jobs in a community?
- How can a deal be structured that will bring economic development impact from a proposed convention facility?
- What can we do to revitalize an area hit by industrial decline?
- How can we upgrade workforce training in existing businesses?
- Should we do more to support new small business creation?
- How can we promote technology start-up ventures?
- What can be done to bring development to impoverished areas of the inner city?
- How can brownfields be made part of an overall economic development plan?

While economic development practice overall is concerned with the promotion of jobs, businesses, and community and regional growth, its practice from a planning and public policy perspective pays close attention to issues of equity, access, distribution, and the quality of life for individuals, communities, regions, and nations. The context for economic development changes continuously, with shifts in economic structures, rapid technological development, increased economic globalization, greater environmental concerns, and ongoing debate about the role and effectiveness of planning and public policy in tackling development issues.

Georgia Tech, the Atlanta region, and the state of Georgia present a wonderful set of laboratories for students interested in the economic development field. Georgia Tech itself plays a major role in state technology-based economic development, offering many business assistance and technology services. The Georgia Tech Enterprise Innovation Institute is a major center for economic development assistance and research (where students frequently find graduate assistantships). The Atlanta Chamber of Commerce is one of the largest in the United States. Many community and regional groups are engaged with economic development issues. And, the state is a major sponsor of a broad array of economic development programs. Many MCRP graduates are engaged in economic development planning in the metro area.

Students who have pursued the economic development concentration at the masters' level find jobs in local, state and federal government, with non-profit groups, and with private consultants. Currently, there is a strong demand for economic development planners and policy analysts.

The economic development specialization in Georgia Tech's School of City and Regional Planning offers students the opportunity to study the conceptual foundations of the field, learn key analytical techniques, and apply this knowledge to practical economic development issues in local, regional, national, and international contexts. In City and Regional Planning, emphasis is placed on industrial restructuring which frames the possibilities for economic development, as well as on infrastructure -- transportation, housing, and the environment -- that supports economic development. In the course offerings in Public Policy, significant attention is given to the central role of technology in influencing and stimulating the processes of economic development. Courses in both programs seek to link economic development strategies to broader social and political concerns.

Required courses in the Economic Development specialization are:

CP 6412	Foundations of Local Economic Development Planning and Policy (Fall)
CP 6422	Economic Development Analysis and Practice (Spring)

Students must also take two additional courses in their particular interest area in economic development from the School of City and Regional Planning, the School of Public Policy, other Georgia Tech units, or at Georgia State University. Available courses include:

CP 6432	Industrial Restructuring and Its Planning Implications
CP 6442	Equity, Social Justice, and Economic Development
CP 6452	Urban Development Policy (joint-listed as PUBP 6606)
CP 6351	Transportation and Economic Development (offered infrequently)
CP 6611	Principles of Real Estate Finance and Development
PUBP 6604	Methods of Urban Policy Analysis and Practice
PUBP 6415	Technology, Regions, and Policy (offered biennially)
ECON 6360	Development Economics <u>or</u> ECON 8600 (GSU) Economics of Development (international course)

Other related courses of interest to those studying economic development include those in community development, labor economics, urban economics, public finance, real estate, science and technology policy, housing, and international development. Students can customize the electives they take in the economic development field, and also combine their interests in economic development with other concentrations.

There are three core faculty associated with economic development teaching and research at GT: Professors Leigh and Kim (City and Regional Planning) and Jennifer Clark (Public Policy).

B. Environment and Health Planning

Environment and health planning integrates knowledge and tools from the fields of environmental management and public health to better understand how the management of the built environment influences human and ecosystem health. As human health criteria are increasingly employed in the design and management of the built environment of cities, the environment and health specialization explores the physical pathways through which land use and urban design influence environmental quality, and how environmental quality, in turn, influences human health. Contemporary examples of environment and health planning include climate responsive design, health impact assessment, green building, brownfield redevelopment, renewable energy planning, urban agriculture, and In light of

the highly interdisciplinary nature of the environment and health specialization, coursework is designed to emphasize the scientific and regulatory foundations of environmental management and public health, analytical tools to measure environment and health interactions, and the design and implementation of policies to improve health and ecosystem outcomes associated with the built environment.

School graduates with expertise in environment and health planning are prepared for employment in a number of areas. Traditional areas of employment include private firms, as consultants to a range of land development activities, and all levels of government, as policy analysts, regulators, and as sustainability program directors or managers. Environment and health planners are also commonly employed in non-governmental organizations with a diverse range of missions focusing on natural resource protection, public health, energy conservation, and environmental justice.

To prepare students for employment in this area of planning, the environmental planning and management specialization requires a minimum of 12 units of coursework, with three required courses:

CP 6223/PUBP 6314	Policy Tools for Environmental Management (Fall)
CP 6213	Urban Environmental Planning and Design (Spring)
CP 6850	Built Environment and Public Health (Fall)

There are no prerequisites for these courses, so they can be taken by students within the environmental planning specialization or by students in other specializations wanting to understand the basics of environmental planning. Faculty members with specialized knowledge in environment and health planning include Professors Botchwey, Elliott, Stiftel, Stone, and Yang.

Students must also choose one additional courses from the list below or from a list approved by their advisor.

CP 6233	Sustainable Urban Development
CP 6261	Environmental Law (same as PUBP 6330 or GSU LAW 7200)
CP 6541	Environmental Analysis using GIS
CP 6105	Land Conservation
CP 6531	Introduction to Remote Sensing
CP 6760	Negotiation, Facilitation and Conflict Management
CP 8823	Health Impact Assessment
CP 8823	Urban Stormwater Planning
CP 8873	Urban Ecological Design
EAS 4410	Climate and Global Change
EAS 6111	The Earth System
EAS 6792	Air Pollution Meteorology
CEE 4310	Water Quality Engineering
CEE 6625	Transportation, Energy, and Air Quality
CEE 6241	Water Resources Management
PUBP 6300	Earth Systems
PUBP 6312	Economics of Environmental Policy
PUBP 6329	Environmental Policy and Implementation

PH 7150	Environmental Health (GSU)
PH 7285	Social Determinants of Health (GSU)
BSHE 535	Macrosocial Determinants of Health (Emory)

Students interested in environmental justice issues may want to contact the Environmental Justice Resource Center at Clark-Atlanta University for more information.

C. Land and Community Development

The *land and community development* specialization's central goal is providing students with the knowledge and skills to guide the real estate development activities of public, private, and/or nonprofit institutions. Graduates pursue careers in all three sectors, and, because contemporary development frequently involves multiple sectors, understanding how the differing perspectives of each sector shape their approaches to development is essential.

A second aim of the specialization is to focus the acquisition of knowledge and skills on urban and suburban redevelopment and infill. This is where much and perhaps most future development will take place over the next generation. As such, the land and community development specialization seeks to educate students in the contemporary procedures and conventions employed to convert land to new urban uses within the context of the differing values and goals of public, private and nonprofit land development institutions.

The land and community development specialization addresses a wide range of analytical activities such as: (1) analyzing project net present value and internal rate of return under different tax and concession scenarios; (2) undertaking comparative market analyses aimed at maximizing a given firm's market capabilities; (3) conducting marketability analyses to determine the best pricing for specific project attributes or set prices for optimal market acceptance of an existing product; (4) analyses of the impacts of public financial subsidy mechanisms such as tax abatement, tax increment financing, fee waivers, historic preservation tax credits, land and/or building write-downs on project feasibility; (5) assessing distinctions between the market concepts of "demand" and the social construct of "need;" (6) evaluating the impact of such housing subsidy programs as the Low Income Housing Tax Credits, the Affordable Housing Program, various Community Development Block Grant programs, Section 8, Housing Enterprise Zones, Empowerment Zones, mortgage subsidy programs and others on meeting low income housing needs; and (7) investigating how markets function within ever-evolving institutional contexts.

The specialization prepares students for careers in such public sector real estate development professional occupations as city or regional planning and/or development authorities, public housing authorities, local land banks, and state housing or development authorities. Private sector careers include real estate research firms, private development companies, financial institutions, and central city and edge City and Regional Planning and development consortia. Nonprofit sector careers include nonprofit developers, community-based community development corporations, development intermediaries, and technical assistance providers.

The land and community development specialization requires two foundational courses: one course in real estate finance and a second course, which must be either CP 6630 Government and Housing

Markets or CP 8863 Special Topics, Community Development. It also permits the selection of two additional courses from a range of alternatives offered by the School of City and Regional Planning, the Real Estate Program at Georgia State University, and the Emory University Law School.

The two foundation courses must be chosen as follows:

CP 6611 Real Estate Finance and Development (Fall)

And EITHER of the following two courses:

CP 6612 Community Development (Fall) OR
CP 6630 Government and Housing Markets (Spring)

Two additional courses will need to be taken from among:

CP 6112 Introduction to Land Use
CP 6630 Government and Housing Markets
CP 6612 Community Development
CP 6640 Applied Real Estate Methods
CP 6834 Urban Design Policy: Analysis and Implementation
CP 6442 Equity, Social Justice and Economic Development
CP 6412 Foundations of Local Economic Development Planning and Policy
CP 6233 Sustainable Urban Development
CP 6452 Urban Development Policy
CP 8873 Urban Ecological Design
PUBP 6604 Urban Policy Analysis and Planning
GSU RE 8060 Applied Market Analysis

Any other 8000 level course in the Real Estate program at GSU

Additional graduate courses at Georgia Tech, Georgia State or Emory University might be eligible to be considered as the land and community development specialization courses, subject to the approval of at least one member of the specialization faculty (Professors Immergluck and Kim) and your advisor. However, the two foundational courses will not be waived without an explicit course waiver from the instructor and your advisor, per the usual requirements. Please contact Professor Immergluck for information about the land and community development specialization.

Students in this specialization may also be interested in a graduate certificate program in real estate offered at Georgia State University, designed especially for Georgia Tech City and Regional Planning students (see Section X. below).

D. Land Use Planning

Historically, *land use planning* has formed the core of the planning profession and provided more planning jobs than any other specialization. Some land use planners create comprehensive plans to guide all aspects of development, while others work in the day-to-day administration of zoning ordinances and subdivision regulations. Land use planners also develop financing plans for the delivery of future public services, and evaluate the diverse impacts of proposed residential, commercial, or industrial development.

Most land use planners work directly for public agencies, but a substantial number also work for consulting firms that provide services to the public and private sectors. All land use planners work to integrate the full range of planning activities in urban design, housing, economic development, transportation, environment, and information systems in order to create cities that are efficient, fair, and sustainable places.

In recent years, land use has emerged as one of the key components of sustainability. Land use decisions have direct and massive impacts on water quality, air quality, biodiversity, energy consumption, and nearly every other aspect of sustainability. Land use planners can be found in the forefront of debate over many of the great planning issues of the day, including fighting sprawl, encouraging smart growth, pursuing neo-traditional development, preserving greenspace, and enabling sustainable development.

The land use specialization requires two courses. One course focuses on planning for development, while the other emphasizes the protection of land from development:

CP 6112	Introduction to Land Use (Fall)
CP 6105	Land Conservation (Spring)

Additional land use courses can include (but are not strictly limited to) the following:

CP 6213	Urban Environmental Planning & Design
CP 6233	Sustainable Urban Development
CP 6331	Land Use & Transportation Interaction
CP 6611	Principles of Real Estate Finance and Development
CP 6630	Government and Housing Markets
CP 6311	Introduction to Transportation Planning
CP 6514	Introduction to Geographic Information Systems
CP 6630	Government and Housing Markets
PUBP 6300	Earth Systems

Georgia State University Courses related to Land Use

Econ 8300	Urban Economics
Law 7320	Land Use Law
PAUS 8031	Urban Political Economy
PAUS 8351	Local Governance/Local Government
Geog 6768	Metropolitan Atlanta

E. Transportation Planning

The specialization in *transportation planning* is designed to provide students with the ability to conceive, consider, and to assess the implications of supply and demand side strategies to enhance local accessibility and regional mobility within the context of an urban system. At the heart of building the student understanding of the role of transportation within the City and Regional Planning framework at Georgia Tech are critical linkages with macro scale aspects of land use, urban form, and regional spatial structure and micro-scale aspects of urban design, site design, and non-motorized movement.

The transportation planning specialization is designed to address issues such as the consideration of:

- equity, environmental, and economic trade-offs between alternative transportation investments;
- inter-governmental issues in reaching regional consensus over transportation investments;
- secondary implications of transportation investments on economic development and urban form;
- physical activity and health implications of alternative transportation investment futures;
- impact of auto dependence and the need for providing travel choices;
- role of transportation supply and demand side solutions;
- land use as a travel demand management strategy; and
- benefits and burdens of alternative transportation and land development proposals for low income and minority populations.

Therefore, it is the interactions between transportation investment and other planning considerations including land use, urban design, environmental quality, and economic development that bring the greatest strength to the transportation planning specialization here at Georgia Tech. This specialization has been historically supported through faculty resources in the School of City and Regional Planning combined with those in the School of Civil and Environmental Engineering.

Students who have pursued the transportation planning concentration are highly competitive in the market place and find careers in local, regional, state, and federal agencies and within the private sector. Transportation planning tends to be amongst the highest paying areas within City and Regional planning. Historically, the demand for transportation planners has been very high.

The transportation planning specialization has two required courses:

- CP 6311 Introduction to Transportation Planning (Fall)
- CP 6321 Transportation Planning Methods and Investment Decisions (Fall)

Other courses available in transportation at Georgia Tech include:

- CP 6331 Land Use – Transportation Interaction
- ECON 6340 Transportation Economics
- CP 6361 Regional Transportation Planning and Administration
- CEE 6601 Statistics in Transport
- CEE 6622 Travel Demand Analysis
- CEE 6625 Transportation, Energy, and Air Quality
- CEE 6632 Simulation in Transportation
- CEE 6642 Transit Systems Planning and Design
- CP 6542 Transportation and GIS

Two courses in transportation are also available at Georgia State.

- PAUS 8611 Transportation Management
- PAUS 8621 Transportation and Land Use Economics

The two faculty members in Planning with transportation planning teaching and research interests are Professors Ross and Welch. Other faculty in Civil and Environmental Engineering include: Professors Randall Guensler, Laurie Garrow, and Adjo Amekudzi.

There is also a dual degree program with Civil and Environmental Engineering in the area of transportation (see Section XII. below).

F. Urban Design

The School of City and Regional Planning offers two alternatives for those who seek to work directly in the process of *urban design* and city building. Students may specialize in urban design within the Master of City and Regional Planning degree or they may pursue the dual degree program that leads to the Master of Architecture and the Master of City and Regional Planning degrees. The dual degree program is explained elsewhere in this document (Section XII).

The urban design specialization within City and Regional Planning is intended for planners who seek to engage effectively with architects, landscape architects, civil engineers and developers in their range of specializations, and with institutions involved in creating urban form and especially the public environment. Students will develop an understanding of how planning and policy alter the character and functionality of the built environment through the legal, regulatory, economic, and social contexts within which urban design may occur. Students will learn concepts and approaches used by architects, landscape architects and civil engineers in the design of urban places, and will learn to develop plans and policies that support good urban design.

The curriculum builds upon three major bodies of material:

- Urban history and design theory as a way of understanding the infrastructural and architectural order of the city,
- The interplay between the private and public sector in conceptualizing infrastructure and development projects, including their economic and policy parameters.
- The processes, methods and techniques necessary to engage urban design and development practices and influence positively policies and strategies that can be implemented in a private market regulated by public bodies.

In support of this specialization, the Schools of Architecture and City and Regional Planning offer a sequence of introductory courses in urban design and several related elective courses. The courses are open to all planning students. However, those interested in the urban design specialization and future practice in the field serve themselves well to either have or pursue an introductory, academic or professional background in a design-related field, such as architecture, engineering, or landscape architecture. Students without this background in design and physical dimensionality are strongly advised to enroll in the lab component of CP 6832, Introduction to Urban Design, as well as CP 8881MD, Drawing for Planners, to learn the basics of scale, dimensionality and representation. In addition, such students should be looking to other courses that may fill in their needs for conversancy with design principles.

The demand for urban designers, including city planners and related professionals, has been growing steadily with the awareness of the pivotal role the physical environment plays in improving quality of life in ever-growing urban regions. Students interested in this specialization should contact Professors Dobbins or Yang.

Courses required in the urban design specialization include:

CP 6832	Introduction to Urban Design (Fall)
CP 6834	Urban Design Policy: Analysis and Implementation (Spring)
CP 8873	Urban Ecological Design (Spring)

In addition, students must take one additional course that supports the urban design specialization, which may be selected from those listed below or as approved by the student's advisor.

Arch4151	History of Urban Form
Arch6151	Theories of Urban Design
Arch6152	Landscape Architecture
Arch6153	History and Theory of the Modern City
Arch7041-2	Urban Design Workshop
CP 6112	Introduction to Land Use Planning
CP 6213	Urban Environmental Planning & Design
CP 6311	Introduction to Transportation Planning
CP 6331	Land Use and Transportation Interaction
CP 6611	Introduction to Real Estate Finance and Development
CP 6640	Applied Real Estate Methods
CP 6514	Introduction to Geographic Information Systems
CP 6422	Economic Development Analysis and Practice
CP 6452	Urban Development Policy
CP 6760	Negotiation, Facilitation and Conflict Management
CP 8881	Drawing for Planners