

# 2010

## THE GRADUATE CERTIFICATE IN TRANSPORTATION PLANNING



Texas A&M University  
College of Architecture

8/1/2010

## Table of Contents

Part I:	Program Description .....	3
Part II:	Criteria and Course Requirements .....	3
Part III:	A. Approved Courses for the Certificate .....	4
	B. Curriculum .....	5
	C. Program Faculty .....	8
	D. Model Degree Plan for Master of Urban Planning Students .....	10
	E. Model Degree Plan for Master of Landscape Architecture Students .....	11
	F. Model Degree Plan for Master of Architecture Students .....	12
	G. Model Degree Plan for Master of Science in Civil Engineering Students .....	13
	G. Model Degree Plan for Master of Public Service and Administration Students .....	14
Part IV:	Summary of Steps Required to Obtain the Certificate .....	15
Part V:	Policy for Maintaining Student Records .....	16

## **PART I: Program Description**

### **Purpose**

The Graduate Certificate in Transportation Planning (CTP or “the Certificate”) is a multi-disciplinary program aimed at providing students with a substantive base of knowledge needed to be broadly successful in the transportation profession, as well as with specialized instruction tailored to building student skills and capabilities in three critical areas: Multimodal Systems Planning, Transportation and Urban Design, and Transportation Policy. This program will be open to any graduate student at Texas A&M University with an interest in transportation. The Certificate in Transportation Planning Program is developed as a partnership between the College of Architecture, the Department of Civil Engineering, the Texas Transportation Institute (TTI), and the Bush School of Government and Public Service. The Certificate will be housed in the Hazard Reduction and Recovery Center, College of Architecture.

### **The CTP Council**

The CTP Council is comprised of at least five (5) faculty members who are experts in the field, including representatives from the participating units---Department of Landscape Architecture and Urban planning (LAUP), Hazard Reduction and Recovery Center (College of Architecture), Department of Civil Engineering, Texas Transportation Institute (TTI), and George Bush School of Government and Public Service. These faculty members will be appointed by the Dean of the College of Architecture to advise on all matters relating to the program.

The Graduate Advisory Committee for each student, with the oversight of degree coordinators, department heads, and the Office of Graduate Studies, is responsible for the academic program of the student. However, the CTP Council is charged with ensuring that students recommended for the certificate have met content standards.

The program can be accomplished within the minimum number of hours required for any of the graduate degrees offered within the College of Architecture. However, the fit with programs in other colleges will need to be assessed on a case-by-case basis. Moreover, the student’s Graduate Advisory Committee might require, or the student may choose to take, additional hours not on the degree plan in order to meet the requirements for the certificate.

### **The Certificate Program**

The Certificate is to be awarded after completion of a prescribed program of study, and must be signed by the head of the student’s academic department and the dean of the college. The certificate contains the seal of the university and appropriate text. It will normally be presented at college ceremonies prior to the official university graduation exercises.

## **PART II: Criteria and Course Requirements**

The College of Architecture will award the Certificate to students meeting the criteria listed below:

1. All students should declare intent to seek the Certificate at the time of filing a Degree Plan, but in any event must submit an application as soon as possible after filing a

Degree Plan. Application forms are available in the Graduate Programs Office in the College of Architecture, and are also available at the Hazard Reduction & Recovery Center and the Certificate Program Coordinator.

2. The student must complete a minimum of fifteen (15) credit hours of course work in transportation planning. This 15-credit sequence of courses is comprised of a foundational course in transportation planning (Foundation: 3 credits), a course providing a foundation in the student's area of focus (Focused Foundation: 3 Credits), two electives in the student's chosen area of focus (6 credits), and a studio and lab course that provides a comprehensive, multidisciplinary application of the skills and knowledge gained during the completion of the certification program (Capstone Course: 3 Credits). The courses must be applicable toward a graduate degree in the College of Architecture, but may not necessarily be included on the student's degree plan. At least, three (3) credit hours of course work with transportation content must be from outside the student's major department.
3. The student must complete a professional study, thesis, or dissertation with a transportation focus approved by the CTP Council if this is required by the student's major program.
4. On completion of all the requirements for the graduate degree, the student will receive "the Certificate" signed by the Dean and the appropriate Department Head.

The student's Graduate Advisory Committee remains the primary body for recommending the degree plan content. Courses required or intended for the Certificate may be used in the degree plan with the concurrence of the Graduate Advisory Committee. Students also may add courses beyond their normal degree requirements in order to fulfill the Certificate requirements. Students are encouraged to consult with their Graduate Advisory Committee *and* the Coordinator of the Certificate as they develop their degree plans.

### **PART III-A: Approved Courses for the Certificate**

The CTP Council will pre-approve a list of courses that meet the requirements for transportation planning content. The list, together with associated syllabi and names of instructors, will be on file in the Transportation Planning Certificate Program Office, which is located in the LAUP Office. The list will be available also in the Hazard Reduction & Recovery Center Office.

Students who identify a course not on the list of pre-approved courses, or who wish to transfer courses from another institution, must submit a written statement that clearly describes how a course lacking prior approval is related to the student's course of study in transportation planning. This written statement, supported by a copy of the course syllabus, will be reviewed by the CTP Council. Where a course has a generic topic (for example a design studio in architecture, or a capstone studio course in land development or planning), the written statement of the transportation planning content and the student's specific role in working with that content must be co-signed by the course instructor. Courses that are not acceptable for use toward a graduate degree at Texas A&M University will not be approved under any circumstances. The CTP Council

may seek input from faculty concerning course content and/or the specific contribution of a student in a course with team activity.

Where the CTP Council makes a negative finding as to applicability of a course, or a final project, the finding will be made in writing with copies to the student, student file, and chair of the student's Graduate Advisory Committee. Appeals against findings of the CTP Council will be made to the academic dean of the College of Architecture.

### **PART III-B: Curriculum**

The curriculum for the Certificate is represented graphically in Figure 1.

#### **1. Foundations of Transportation Practice (3 Credit Hours)**

Students pursuing the Certificate will begin their study by taking PLAN 612: Transportation in City Planning, which provides a comprehensive overview of the role of transportation in society. Required Course:

- PLAN 612: Transportation in City Planning

#### **2. Focus Area (9 Credit Hours)**

The second step in the completion of the Certificate is the completion of nine (9)-credits in one of three specific areas of professional focus. Each of the three focus areas is designed to meet critical needs within the transportation profession, and is tailored towards securing students placement in appropriate transportation-related agencies and organizations.

##### **a. Multimodal Systems Planning**

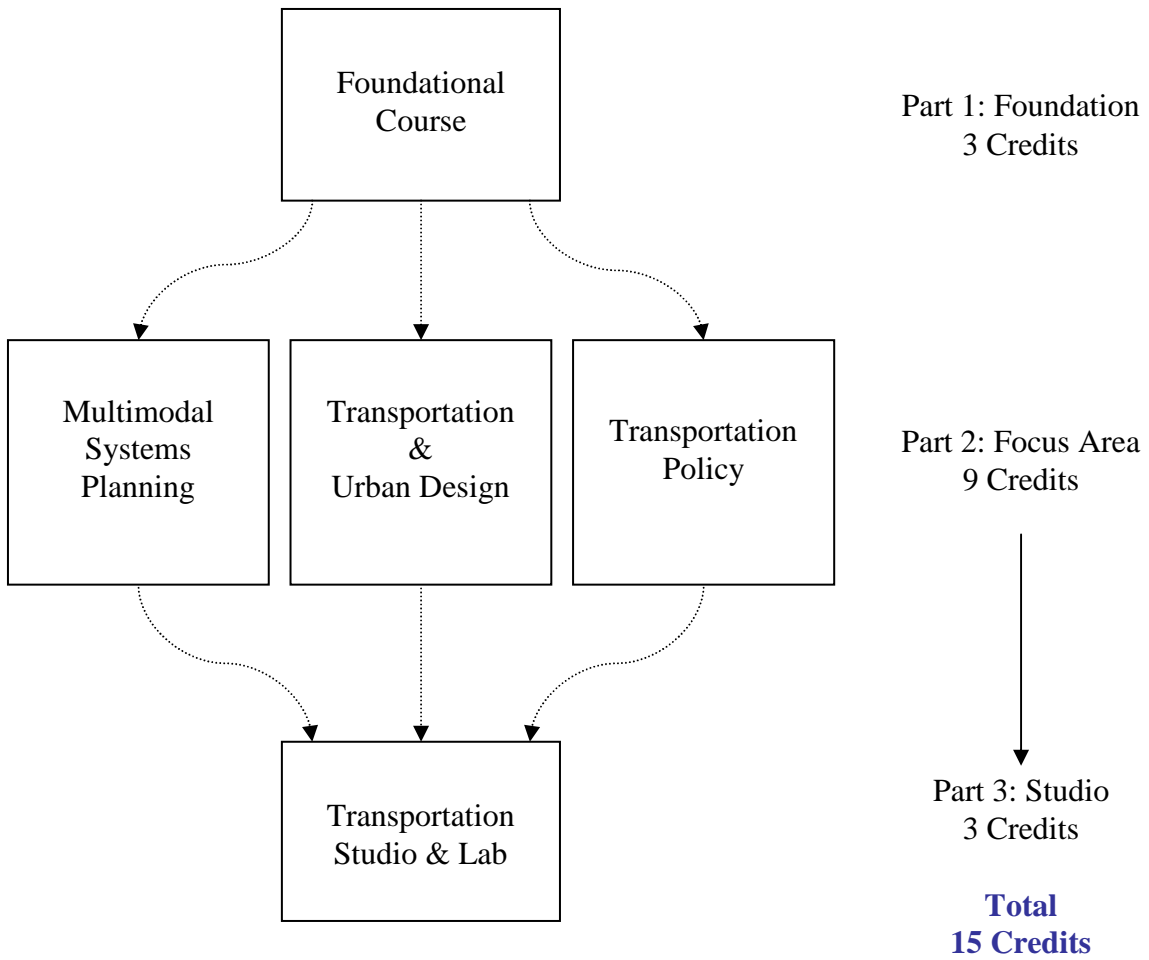
The focus area in *Multimodal Systems Planning* is intended for students seeking to address regional-level transportation issues. This focus area builds upon the foundational curriculum by providing an in-depth examination of multimodal solutions for addressing regional mobility, as well providing students with instruction on the tools and methods used for designing and aligning regional-level transportation system investments. Students focusing on *Multimodal Systems Planning* will have the educational background needed for successful employment in metropolitan planning organizations (MPOs), Regional Councils of Governments (COGs), as well as the diverse array of private consulting firms who provide support for the activities of these agencies. Courses for students focusing on Multimodal Systems Planning are:

Required: Focused Foundation in Multimodal Systems Planning (3 Credits)

- PLAN 670: Urban Public Transportation Planning

Electives: Multimodal Systems Planning (6 Credits)

- PLAN 650: Disaster Response Planning
- PLAN 674: Transportation Systems Analysis
- PLAN 673: Design for Sustainable Transportation
- CVEN 672: Engineering and Planning Urban Transportation Systems



**Certificate in Transportation - Curriculum Structure**

- CVEN 618: Traffic Engineering: Operations
- PLAN 626: Advanced GIS in Landscape Architecture and Urban Planning\*
- PLAN 676: Transportation Investment Decisions (NEW)

\* Prerequisite: PLAN 625: Geographic Information Systems in Landscape Architecture and Urban Planning, or an approved substitute.

b. Transportation and Urban Design

The focus area in *Transportation and Urban Design* seeks to address the growing demand for transportation professionals who can balance conventional mobility concerns with the needs of the built and natural environments. Despite the call from industry leaders such as the Federal Highway Administration (FHWA), the Institute of Transportation Engineers (ITE), and the Transportation Research Board (TRB) for a more “context-sensitive” approach to transportation planning and design few, if any, University programs provide specific instruction in this area. The focus area in *Transportation & Urban Design* seeks to build upon TAMU’s reputation as a leader in transportation education by providing specialized instruction aimed at addressing this critical professional need. Students focusing in *Transportation and Urban Design* will typically find employment in the growing number of private firms providing specialized transportation design services to both local governments and state departments of transportation (DOTs), as well in staff positions in public-sector agencies. Courses for students focusing in *Transportation & Urban Design* are:

Required: Focused Foundation in Transportation and Urban Design (3 Credits)

- PLAN 673: Design for Sustainable Transportation

Electives: Transportation and Urban Design (6 Credits):

- PLAN 674: Transportation Systems Analysis
- PLAN 670: Urban Public Transportation Planning
- LAND 661: Visual Quality for Design and Planning
- PLAN 676: Transportation Investment Decisions
- CVEN 617: Traffic Engineering - Characteristics
- CVEN 635: Street and Highway Design
- CVEN 618: Traffic Engineering: Operations
- CVEN 672: Engineering and Urban Transportation Systems

c. Transportation and Public Policy

Total public expenditures in transportation infrastructure total more than \$170 billion per year,<sup>1</sup> with many public funding programs tied to specific program grants that direct how transportation system investments are made. The

---

<sup>1</sup> Source: Bureau of Transportation Statistics (2005). *Transportation Statistics Annual Report*. Washington DC: Bureau of Transportation Statistics, November.

*Transportation and Public Policy* focus area is intended to develop policy innovators who are able to tailor public policy and finance to address emerging transportation needs. Students focusing in this area will have the educational background needed to assume policy and managerial positions in public-sector entities responsible for transportation planning and investments, such as state and local departments of transportation (DOTs), as well as in the Federal agencies tasked with oversight over the nation's transportation system, such as the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), among others. Proposed courses for this focus area include:

Required: Focused Foundation in Transportation and Public Policy (3 Credits)

- PLAN 676: Transportation Investment Decisions

Electives: Transportation and Public Policy (6 Credits)

- PSAA 611: Public Policy Formation
- PSAA 616: Public Organization in a Pluralistic Society
- PSAA 617: State and Local Government Policy
- PSAA 622: Public Finance
- PSAA 634: Public Management
- PLAN 650: Disaster Response Planning

### **3. Capstone Course (3 Credit Hours)**

The Certificate in Transportation will culminate in a second-year capstone course that synthesizes the knowledge obtained during the course of the certificate program. As envisioned, the Capstone Course will require students from each of the three focus areas to work collaboratively to develop comprehensive real-world solutions to transportation problems at the local and regional scales. As growth and demand in individual focus areas permits, additional capstone courses may be added that are tailored towards students in specific focus areas.

Required (3 Credits)

- PLAN 678: Applied Transportation Studio

### **PART III-C: Program Faculty**

The following faculty members have special expertise appropriate to Transportation Planning and should be considered for inclusion on Guidance Committees:

- Eric Dumbaugh, Landscape Architecture & Urban Planning
- Bill Eisele, Texas Transportation Institute & Landscape Architecture & Urban Planning
- Chanam Lee, Landscape Architecture & Urban Planning



- Ming Han Li, Landscape Architecture & Urban Planning
- Michael Lindell, Landscape Architecture & Urban Planning
- Tim Lomax, Texas Transportation Institute & Landscape Architecture & Urban Planning
- Forster Ndubisi, Landscape Architecture & Urban Planning
- Dennis Perkinson, Texas Transportation Institute & Landscape Architecture & Urban Planning
- Katherine Turnbull, Texas Transportation Institute & Landscape Architecture & Urban Planning
- Douglas Wunneburger, Landscape Architecture & Urban Planning
- Mark Burris, Civil Engineering
- Luca Quadrifoglio, Civil Engineering
- Eric Lindquist, Bush School of Government and Public Service
- Arnold Vedlitz, Bush School of Government and Public Service

**PART III-D: Model Degree Plan for Master of Urban Planning Students\***

Fall Semester I	PLAN 601: Introduction to Urban Planning	1
	PLAN 604: Planning Methods I	3
	PLAN 610: Structure and Function of Settlements	3
	<i>PLAN 612: Transportation in City Planning</i>	<u>3</u>
		13
Spring Semester I	PLAN 613: Planning Methods II	3
	PLAN 640: Law and Legislation	3
	<i>PLAN 673: Design for Sustainable Transportation</i>	3
	<i>PLAN 674: Transportation Systems Analysis</i>	<u>3</u>
		12
Fall Semester II	PLAN 684: Professional Internship	1
	PLAN 662: Applied Planning I	3
	<i>PLAN 670: Urban Public Transportation Planning</i>	3
	Elective	3
	Elective	<u>3</u>
		13
Spring Semester II	PLAN 663: Applied Planning II	3
	PLAN 693: Professional Study	1
	<i>PLAN 678: Applied Transportation Studio</i>	3
	Elective	<u>3</u>
		10
Minimum Hours Standard Degree		<b>48</b>

---

\* CTP classes in *italics*

---

\* Note: Specific course sequences may vary given the focus area selected by the individual student. The above sequence represents the anticipated schedule for a student focusing on Multimodal Transportation Systems Planning.

**PART III-E: Model Degree Plan for Master of Landscape Architecture Students\***

---

Fall Semester I	LAND 620: Open Space Development 1	5
	LAND 640: Research Methods in Landscape Arch.	3
	RLEM 602: Ecology and Land Uses	3
	<i>PLAN 612: Transportation in City Planning</i>	<u>3</u>
		14
Spring Semester I	LAND 621: Open Space Development II	5
	LAND 681: Seminar	1
	<i>PLAN 673: Design for Sustainable Transportation</i>	3
	<i>PLAN 674: Transportation Systems Analysis</i>	<u>3</u>
		12
Summer Semester I	LAND 684: Professional Internship	<u>4</u>
		4
Fall Semester II	LAND 646: Professional Practice	3
	LAND 693: Professional Study	3
	<i>PLAN 670: Urban Public Transportation</i>	3
	Elective	<u>3</u>
		12
Spring Semester II	LAND 646: Professional Practice	3
	LAND 693: Professional Study	4
	<i>PLAN 678: Applied Transportation Studio</i>	<u>3</u>
		10
Minimum Hours Standard Degree		<b>48</b>

---

\* CTP classes in *italics*

---

\* Note: Specific course sequences may vary given the focus area selected by the individual student. The above sequence represents the anticipated schedule for a student pursuing a Master of Landscape Architecture Degree that is focusing on Transportation and Urban Design.

**PART III-F: Model Degree Plan for Master of Architecture Students\***

---

Fall Semester I	ARCH 605: Design I	6
	ARCH 631: Structure Elements III	3
	ARCH 633: Environmental Systems 3	<u>3</u>
		12
Spring Semester I	ARCH 606: Design II	6
	<i>PLAN 673: Design for Sustainable Transportation</i>	3
	ARCH 638/9: Architectural History	<u>3</u>
		12
Summer Semester I	ARCH: Architecture Elective	<u>3</u>
		3
Fall Semester II	ARCH 607: Design III	6
	<i>PLAN 670: Urban Public Transportation</i>	3
	<i>PLAN 612: Transportation in City Planning</i>	3
	ARCH 685: Final Study Prep	<u>1</u>
		13
Spring Semester II	ARCH: Professional Practice	3
	ARCH: 693: Professional Study	6
	<i>PLAN 678: Applied Transportation Studio</i>	<u>3</u>
		12
Minimum Hours Standard Degree		<b>52</b>

---

\* CTP classes in *italics*

---

\* Note: Specific course sequences may vary given the focus area selected by the individual student. The above sequence represents the anticipated schedule for a student pursuing a Master of Architecture Degree that is focusing on Transportation and Urban Design.

**PART III-G: Model Degree Plan for Master of Science in Civil Engineering Students\***

Fall Semester I	CVEN 617: Traffic Engineering - Characteristics	3
	CVEN 681: Seminar in Transportation	1
	<i>CVEN 672: Engineering and Urban Transportation</i>	3
	<i>PLAN 612: Transportation in City Planning</i>	3
	Elective	<u>3</u>
		13
Spring Semester I	CVEN 632: Transportation System Management	3
	CVEN 618: Traffic Engineering - Operations	3
	<i>CVEN 635: Street and Highway Design</i>	3
	<i>PLAN 673: Design for Sustainable Transportation</i>	3
	<i>PLAN 678: Applied Transportation Studio</i>	<u>3</u>
		15
Summer Semester I	CVEN 685: Directed Studies	2
	CVEN Summer Course <sup>+</sup>	2
Minimum Hours Standard Degree		<b>32</b>

\* CTP classes in *italics*

\* Note: Specific course sequences may vary given the focus area selected by the individual student. The above sequence represents the anticipated schedule for a student pursuing a Master of Science and Civil Engineering that is focusing on Transportation and Urban Design.

<sup>+</sup> Note: The Department of Civil Engineering is currently revising its curriculum to identify an appropriate 2 credit hour summer course.

**PART III-G: Model Degree Plan for Master of Public Service and Administration \***

Fall Semester I	BUSH 601: Leadership and Public Administration	3
	PSAA 621: Economic Analysis	3
	BUSH 631: Quantitative Methods in Public Mgmt I	3
	<i>PSAA 611: Public Policy Formation</i>	<u>3</u>
		12
Spring Semester I	BUSH 632: Quantitative Methods in Public Mgmt II	3
	<i>PSAA 622: Public Finance OR PSAA 634: Public Management</i>	3
	<i>PLAN 676: Transportation Investment Decisions</i>	3
	Elective	<u>3</u>
		12
Summer Semester I	Professional Internship	
Fall Semester II	PSAA 675: Capstone I	3
	PSAA 615: Policy Analysis OR PSAA 623: Budgeting in Public Service	3
	<i>PLAN 612: Transportation in City Planning</i>	3
	Elective	3
		12
Spring Semester II	PSAA 676: Capstone II	3
	<i>PLAN 678: Applied Transportation Studio</i>	3
	Elective	3
	Elective	<u>3</u>
		12
Minimum Hours Standard Degree		<b>48</b>

---

\* CTP classes in *italics*

---

\* Note: Specific course sequences may vary given the focus area selected by the individual student. The above sequence represents the anticipated schedule for a student pursuing a Master of Public Service and Administration degree that is focusing on Transportation and Public Policy.

#### **PART IV: Summary of Steps Required Obtaining the Certificate**

Students are strongly encouraged to meet with a member of the CTP Council (in particular, the Certificate Coordinator) prior to filing an application and completing a degree plan.

**Step One:** *Initial Application for the Certificate.* At the time a degree plan is filed, the student will complete an Initial Application for the Certificate and attach to it to a copy of the Degree Plan signed by the student's Graduate Advisory Committee and the head of the student's department. The CTP Council will review the Initial Application for compliance with the requirements for content. Initial Applications for the Certificate submitted after filing a degree plan can usually be expected to require a revision of the degree plan and may delay timely progress toward degree completion.

**Step Two:** *Review of the Final Application.* Master's level students must provide the CTP Council with an abstract and any supporting justification as may be required to evaluate the topical relevance of transportation planning to their professional study, professional paper, or thesis, if such a product is required in their degree program. This information must be submitted after the manuscript has been approved by the student's Graduate Advisory Committee. Doctoral students must provide the CTP Council with an abstract and any supporting justification as may be required to evaluate the topical relevance to transportation planning to their dissertation. This information must be submitted after the defense of the dissertation proposal. The CTP Council will review the Final Application for compliance with the requirements for content and forward its recommendation to the Graduate Programs Office.

**Step Three:** *Issue of the Certificate.* At the time the student is approved for receipt of a relevant graduate degree, the Graduate Programs Office in the College of Architecture (COA) will review the approved certificate courses and advise the Dean of the College of Architecture of successful completion. The Dean of the COA will then authorize the granting of the Certificate.

## **PART V: Policy for Maintaining Student Records**

Official Graduate Transportation Planning Certificate Program records consist of the *Application*, a copy of the approved *Degree Plan* (and any subsequent *Petitions* that may impact the previously approved program), an *Abstract* of the final project topic, and any official correspondence. These records will be kept in the official student folders in the COA Graduate Programs Office. For reference purposes the COA Graduate Programs Office will create and maintain a database showing all students who have received, or are currently enrolled in the Certificate Program.

*Name*

*Degree Program*

*Date of Application*

*Date of Actions For Each Step Above*

*Title of Project, Paper, Thesis, Or Dissertation*

*Name Of Chair Of Graduate Advisory Committee*

*Date Of Degree/Certificate Awarded*

*Permanent/Current Address/E-Mail*

*Employment Data*

This database will be accessible by the Transportation Planning Program Office and the HRRC, which also maintains hardcopy files for developing data on the career histories, addresses, email address, etc. of certificate holders and current students. Student grades will not be available outside the COA Graduate Programs Office, and personal data will not be released, except in accordance with state law and university guidelines.



**APPLICATION FOR ADMISSION TO THE  
GRADUATE CERTIFICATE IN TRANSPORTATION PLANNING PROGRAM**

**Student Information:**

Name: \_\_\_\_\_ Student ID Number: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone(s): \_\_\_\_\_ Email: \_\_\_\_\_

Date of application: \_\_\_\_\_

**Degree Information:**

Department: \_\_\_\_\_

Degree Program: (please circle)

*Doctoral Degree*

Ph.D. (ARCH)

Ph.D. (URSC)

Ph.D. (Other)

\_\_\_\_\_

*Master's Degree*

M.ARCH

MS(Arch)

MLA

MUP

MSLD

MS(COMG)

MS(VIZA)

MA/MS (Other)

\_\_\_\_\_

Chair of Graduate Advisory Committee: \_\_\_\_\_

Expected completion date: \_\_\_\_\_

Please attach a preliminary description or final abstract of dissertation, final study, thesis, or professional report or paper:

**STUDENT DEGREE PLAN FOR THE  
GRADUATE CERTIFICATE IN TRANSPORTATION PLANNING**

List the courses you propose to meet the Transportation Planning Certificate requirements.

Department Abbreviation	Course Number	Course Title	Credit Hours

\_\_\_\_\_  
Signature of Student

\_\_\_\_\_  
Date

**Approval Recommended:**

\_\_\_\_\_  
Certificate in Transportation Planning Council

\_\_\_\_\_  
Date

<u>Graduate Programs Office</u>	<u>CTP Program Office</u>	<u>Student</u>	Chair, Student's Graduate Advisory Committee
---------------------------------	---------------------------	----------------	--

**PETITION TO GRADUATE AND FINAL PAPER PROPOSAL  
GRADUATE CERTIFICATE IN TRANSPORTATION PLANNING PROGRAM**

Submit this form to the Program Assistant of the Hazards Reduction and Recovery Center

**Student Information:**

Name: \_\_\_\_\_ Student ID

Number: \_\_\_\_\_

Address:

\_\_\_\_\_

Phone(s): \_\_\_\_\_

Email:

Date of application: \_\_\_\_\_

**Degree Information:**

Department:

\_\_\_\_\_

Degree Program: (please circle)

*Doctoral Degree*

Ph.D. (ARCH) Ph.D. (URSC) Ph.D. (Other)

\_\_\_\_\_

*Master's Degree*

M.ARCH MS(Arch) MLA MSCE MUP MSLD MPSA

MA/MS (Other)

\_\_\_\_\_

Scheduled Graduation Date: \_\_\_\_\_

**Approved (Faculty Use Only):**

\_\_\_\_\_

\_\_\_\_\_

Graduate Advisor Certificate Coordinator

If a dissertation, final study, thesis, or professional report is required for your degree, attach a 1-page abstract to this form.