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University Transportation Center for Mobility™

DOT Grant No. DTRT06-G-0044

Transit Management Certificate Program

Final Report

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Performing Organization

University Transportation Center for Mobility™
Texas Transportation Institute
The Texas A&M University System
College Station, TX

Sponsoring Agency

Department of Transportation
Research and Innovative Technology Administration
Washington, DC



**UTCM Project #10-55-48
July 2012**

Technical Report Documentation Page

1. Report No. UTCM 10-55-48		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle TRANSIT MANAGEMENT CERTIFICATE PROGRAM				5. Report Date July 2012	
				6. Performing Organization Code Texas Transportation Institute	
7. Author(s) Linda Cherrington, Matt Sandidge, and Ken Joh				8. Performing Organization Report No. UTCM 10-55-48	
9. Performing Organization Name and Address University Transportation Center for Mobility™ Texas Transportation Institute The Texas A&M University System 3135 TAMU College Station, TX 77843-3135				10. Work Unit No. (TRAIS)	
				11. Contract or Grant No. DTRT06-G-0044	
12. Sponsoring Agency Name and Address Department of Transportation Research and Innovative Technology Administration 400 7 th Street, SW Washington, DC 20590				13. Type of Report and Period Covered Final Report Jan. 1, 2010–May 31, 2012	
				14. Sponsoring Agency Code	
15. Supplementary Notes Supported by a grant from the U.S. Department of Transportation, University Transportation Centers Program					
16. Abstract TTI worked closely with the Landscape Architecture and Urban Planning Department (LAUP) of Texas A&M University (TAMU) to develop a transit management certificate focus for the current Graduate Certificate in Transportation Planning (CTP) housed in the College of Architecture at TAMU. The purpose of the focus area is to provide graduate level curriculum to individuals interested in public transportation. The focus is multidisciplinary and open to all graduate students at Texas A&M University. This program is the first step in the development of future educational opportunities in public transportation in Texas.					
17. Key Words Transit, Training, Certificate, Education			18. Distribution Statement Public distribution		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 43	22. Price n/a

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UTCM Final Report
Project Title: "Transit Management Certificate Program"
Project #10-55-48

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July 2012

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ACKNOWLEDGMENT

Support for this research was provided by a grant from the U.S. Department of Transportation, University Transportation Centers Program to the University Transportation Center for Mobility™ (DTRT06-G-0044) at Texas Transportation Institute. The authors wish to thank the Shannon Van Zandt, Nicolas Norboge, Lana Wolken, and Lisa Larsen for providing valuable insight for developing the certificate focus area. Additional thanks goes to Lisa Patke for document formatting assistance.

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Executive Summary

During the Transit Leadership Initiative University Transportation Center for Mobility™ (UTCMI) 09-38-04, the Texas Transportation Institute (TTI) identified a need for educational opportunities for the public transportation industry in Texas. As a result, TTI created the idea of a transit management certification program. TTI worked closely with the Landscape Architecture and Urban Planning Department (LAUP) of Texas A&M University (TAMU) to develop a transit management focus area for the current Graduate Certificate in Transportation Planning (CTP) housed in the College of Architecture at TAMU. The purpose of the focus area is to provide graduate curriculum to individuals interested in public transportation. The focus is multidisciplinary and open to all graduate students at Texas A&M University. This program is the first step in the development of future educational opportunities in public transportation in Texas.

The research team established a certificate advisory committee (the committee) to develop the transit management certificate goals, objectives, and content for the certificate courses. The committee canvassed the course curriculum from multiple colleges within TAMU to determine appropriate elective courses for the transit management focus area. The committee identified courses within LAUP, Bush, Civil Engineering, and Management that are offered on at least an annual basis.

The outcomes of the project are as follows:

- TTI and LAUP worked together to modify the Certificate in Transportation Planning Program Description and Degree Requirements to include a fourth focus, Transit Management.
- LAUP sent the revised Graduate Certificate in Transportation Planning Program Description and Degree Requirements to University Senate for approval June 15, 2012.
- The focus area development process engaged the interest from multiple academic departments at Texas A&M University.
- The Transit Management focus area provides the only formal academic curriculum in public transportation in Texas (there are very few total in the United States).
- The framework for the focus area is suitable for future continuing education opportunities among mid-career professionals.
- The multidisciplinary nature of the transit management focus area is attractive to students in varying fields of study.
- The LAUP Department will offer the focus area starting in Fall 2012.

Introduction

The Texas Transportation Institute worked closely with the Landscape Architecture and Urban Planning Department of Texas A&M University to develop a transit management certificate focus area for the current Transportation Planning Certificate. The purpose of the focus area is to provide formal training to individuals interested in public transportation. The program is multidisciplinary and open to all graduate students at Texas A&M University. The transit management track curriculum is particularly geared toward students seeking a Master of Urban Planning (MUP), Master of Public Service and Administration (MPSA), or Master of Business Administration (MBA).

This document provides an overview of the transit management certificate track and the process in which it is being implemented. The report is divided into four sections:

- **Project Significance and Background** provides information on how the idea of a transit management certificate was developed. Additionally, this section describes similar efforts to implement transit management certificates across the nation.
- **Development Process** offers information on the steps taken to develop the transit management certificate track. This section describes the forming of the committee and the meetings held. Additionally, this section provides the certificate curriculum and obstacles encountered (maintaining a transit focus).
- **Project Outcomes** provide the results of the efforts that the certificate advisory committee put forth in developing the transit management program.
- **Outreach Plan and Recommended Next Steps** presents the committee ideas on how to market this program to current and prospective students. Additionally, this section provides ideas on how to engage the interest of current transit professionals with continuing education opportunities.

Project Significance and Background

TTI researchers developed the idea for the Transit Management Certificate upon completion of the *Transit Leadership Initiative*, UTCM Project 09-38-04. During this initiative, transit stakeholders identified industry needs. Public transportation systems in Texas need quality managers and administrators to serve as leaders for an industry that is increasingly important for the social and economic health of rural and small urban communities. However, transit stakeholders told TTI that individuals entering the public transportation industry generally lack transit-specific education and management skills.

Need for Academic Program

There are no university academic programs in Texas that address public transportation as a career field. In addition, there is a need for continuing education for personnel already working in public transportation. Administration of public transportation agencies is becoming increasingly complex. There is a need for leadership programs to reinforce and improve management skills for strategic planning, communications, organizational development, financial management, and performance measurement and accountability within the context of developing and operating public transportation systems. The needs identified in the Transit Leadership Initiative petition for a formal academic program

emphasizing the skills necessary for a career in public transportation. Additionally, TTI recognized the success of other formal academic transportation training programs, such as the Transportation Planning Certificate within the LAUP department. This Transportation Planning Certificate was part of UTCM Project 08-21-10 *Developing an Interdisciplinary Certificate Program in Transportation Planning*.

TTI researchers found that a Transit Management Certificate program could provide the leadership training needed for the current generation of public transportation managers in rural and small urban areas in Texas, and provide needed academic preparation to attract career professionals into the industry in the future. A certificate program will also foster lasting partnerships between the participating departments, schools, and with Texas Department of Transportation (TxDOT) and the public transportation industry in Texas. Currently, there are few efforts in the United States to offer a transit-related certificate. The section below describes the current efforts.

National Certificate Programs

Historically, certificate programs emphasizing public transportation have not been offered. This section of the report provides information on three programs currently offered or being developed. The programs are offered in Ohio, California, and Massachusetts.

Ohio Department of Transportation

The Ohio Department of Transportation (DOT) provides a Transportation Certificate Program, in partnership with Wright State University and Kent State University–Stark Campus. The program consists of professional development one weekend each semester for individuals already employed in the transit industry. Also, the program offers a three-course curriculum in public transit and social services transportation management, developed in cooperation with Wright State University and sponsored by Ohio DOT, and includes an overview of transit funding and operations, as well as social services transportation funding and operations. The certificate is geared toward public and private non-profit passenger transportation industry.

The program consists of college courses with practical assignments, such as ride the Greater Dayton Regional Transit Authority and write observations as they relate to specific topics like customer service and ease of access. Additionally, the course will include guest speakers from the transit industry and social service transportation agencies, and both mid-term and final exams.

Students at Wright State University and Kent State University–Stark Campus have access to the certificate program. One course is offered every semester. In addition, Ohio DOT recently began a one-hour credit course at Wright State University on weekends (two consecutive Saturdays) for individuals already employed in passenger transit. The plan is to offer the weekend course each semester. Instructors work for the university and have extensive experience in the public transit and social services transportation profession.

Students must complete core courses and elective courses as well as an internship to obtain certificate. Ohio DOT provides funding to pay a stipend for those participating in the internship and assists in recruiting transit systems to provide internship sites.

*Eberhardt School of Business Westgate Center for Leadership and Management Development
University of the Pacific*

The University of the Pacific works with the California DOT and regional public transportation providers in southern California to offer the Transit and Paratransit Management Certificate. The certificate program is offered as an executive development program for current managers or transit employees that are candidates for management positions. The curriculum consists of the following one-day courses:

- Overview of Transit and Paratransit Today.
- Managing the Operation Effectively.
- Effective Communication Skills.
- Overview of Transit Legislation, Regulation, and Policy.
- Budgeting and Financial Management.
- Enhancing Leadership Effectiveness.
- Marketing and Customer Service.
- Legal Issues in Employee Relations.
- Risk Management and Safety.

Certification is offered in both Southern and Northern California. In Southern California, Orange County Transportation Authority, Orange, California provides the certification coursework. In Northern California, students take certification coursework at Joseph P. Bort MetroCenter, Oakland, California. Courses are offered each Spring. Each course is a day-long session from 8:30 a.m. to 4:30 p.m. The program contains nine instructors who are industry professionals. Students must complete eight of the nine courses. Upon completion of the coursework, the students earn continuing education credits.

UMass Certificate in Transit Operations and Management

The University of Massachusetts (UMass) is implementing a certificate in transit management and operations within the Department of Civil and Environmental Engineering. The certificate is designed to draw students from Civil Engineering, Management, and Planning; however, the certificate will be available for all undergraduate and graduate students to pursue. UMass has a student-run transit system that operates on and off campus. Many of these students continue in transit upon graduation. The transit management and operations certificate provides formal education to individuals wanting to pursue a career in transit.

The program consists of 15 credit hours and has two required courses: Civil and Environmental Engineering (CEE) 510 Public Transportation Systems and CEE 518 Intelligent Transportation Systems. The elective course work consists of classes from CEE, economics, management, and public policy.

Students take certification courses at UMass Amherst campus. The program will be available to undergraduate and graduate students in college course format. Eventually, continuing education professionals will have access to the program via online coursework. Students must complete an internship with a transit agency. The certificate committee intends to implement required internship hours. Additionally, students must do a professional development workshop offered each summer.

The core requirement courses are offered once per year. Elective courses are offered at least once annually. UMass faculty teaches the university coursework. The UMass Director of Transportation Services and the General Manager for CTTransit teach the summer professional development workshop. Upon completion of the program, students receive a Certificate in Transit Operations and Management.

Development Process

TTI established a certificate advisory committee (the committee) to develop the transit management certificate goals and objectives, and content for the certificate courses. The purpose of the committee is to determine how the certificate can benefit the transit industry and be viable among students at Texas A&M University. TTI appointed members affiliated or familiar with the academic departments comprising the existing Transportation Certificate Program, including Landscape Architecture and Urban Planning, Bush School of Government and Public Service, and Civil Engineering. Additionally, TTI sought academic representation from Mays Business School and transit industry representatives. The committee consisted of the following members:

TTI

- Linda Cherrington – Research Scientist: Served as principal investigator.
- Matt Sandidge – Assistant Transportation Researcher: Recent graduate of the Master of Urban Planning program and received the Certificate in Transportation Planning. Served as project manager.
- Katie Turnbull – Executive Associate Agency Director: Provided support in the development of the original transportation planning certificate.
- Nick Norboge – Assistant Transportation Researcher: Recent graduate of the Public Service and Administration program from Texas A&M University and received the Certificate in Transportation Planning.
- Lisa Larsen – Graduate Assistant Researcher: Recent graduate of the Master of Civil Engineering, program from Texas A&M University and received the Certificate in Transportation Planning.

TAMU Department of LAUP

- Ken Joh – Assistant Research Scientist (TTI) and Assistant Professor in the Department of LAUP: Certificate in Transportation Planning coordinator.
- Shannon Van Zandt – Associate Professor in the Department of LAUP: Master of Urban Planning program coordinator.

TAMU Transportation Services

- Lana Wolken – Assistant Director of Transit Texas A&M University.

Methodology for Certificate Development

The committee used a three-step process to create and implement the transit management certificate. This section provides the details on each of the following steps:

1. Identify a department to accommodate the transit management certificate.
2. Establish curriculum for the certificate.
3. Implement the certificate.

Department to Accommodate the Transit Management Certificate

The idea of a transit management certificate partially stemmed from the success of the Graduate Certificate in Transportation Planning (CTP), which was part of UTCM Project 08-21-10 *Developing an Interdisciplinary Certificate Program in Transportation Planning*. The CTP program was established in August 2008 as a partnership between LAUP, TTI, Civil Engineering, and the Bush School, and is housed in the Hazard Reduction and Recovery Center in the College of Architecture. The existing CTP has three focus areas designed to meet critical needs within the transportation profession and tailored towards securing placement in appropriate transportation-related agencies. These focus areas include Multimodal Systems Planning, Transportation and Urban Design, and Transportation Planning and Public Policy. The committee decided that adding the transit management certificate as a fourth focus area under the existing CTP would be the most feasible option rather than offering a “stand-alone” transit management certificate.

Establish Curriculum for Transit Management Focus Area

Original Certificate Curriculum Format

The committee reviewed the current requirements for the CTP to determine how the transit management focus area could work within the set curriculum. The CTP requires students to complete a minimum of 15 credit hours of course work in transportation planning, which includes the following:

1. One foundational course (PLAN 612: Transportation in City Planning).
2. 3-hour Focus Foundation course.
3. 6-hour Focus Area courses.
4. Capstone course (PLAN 678: Applied Transportation Studio).

Proposed Certificate Curriculum Format

The committee initially proposed a curriculum change to accommodate the transit management focus area. The following requirements reflect the proposed changes:

1. One foundational course (PLAN 612: Transportation in City Planning) (no change).
2. 3-hour Focus Foundation course.
3. 9-hour Focus Area courses (as opposed to six hours).
4. Internship in public transportation (in lieu of the capstone).

After meeting with the LAUP department head, the committee decided that a curriculum change was not appropriate for the scope of the transit management certificate. Therefore, the committee maintained the original structure of the CTP for the transit management focus area.

The committee canvassed the course curriculum from multiple colleges within Texas A&M University to determine appropriate elective courses for the transit management focus area. The committee identified courses within LAUP, Bush, Civil Engineering, and Management that are offered on at least an annual basis. For a list of the courses considered, see Appendix A. The courses identified as essential to the transit management focus area include the following:

Required: Focused Foundation in Transit Management (3 Credits).

- *PLAN 670: Urban Public Transportation Planning*.*
- *PLAN 673: Design for Sustainable Transportation.*

*Electives: Transit Management (9 Credits)**.*

Planning and Civil Engineering.

- *CVEN 618: Traffic Engineering: Operations.*
- *CVEN 672: Engineering and Planning Urban Transportation Systems.*
- *PLAN 672: Transportation and the Environment.*
- *PLAN 674: Transportation Systems Analysis.*

Management, Policy and Finance.

- *MGMT 630: Behavior and Organizations.*
- *MGMT 639: Negotiations in Competitive Environments.*
- *MGMT 655: Survey of Management.*
- *MGMT 658: Managing Projects.*
- *MGMT 675: Leadership in Organizations.*
- *PLAN 676: Transportation Investment Decisions.*
- *PSAA 611: Public Policy Formation.*
- *PSAA 622: Public Finance.*
- *PSAA 634: Public Management.*
- *PSAA 636: Grant and Contract Management.*
- *PSAA 648: Performance Management in the Public and Nonprofit Sectors.*

** Students are advised to take PLAN 670 if available, but PLAN 673 will also satisfy this requirement.*

*** Students will be required to take one course under Planning and Civil Engineering and two courses under Management, Policy and Finance.*

To ensure students receive training necessary for transit management, the committee divided the elective courses into two sections—Planning and Civil Engineering, and Management, Policy, and Finance. Students must choose at least one course from each of those sections. This requirement provides the students a combination of training from Planning, Engineering, Public Policy, and Management—each necessary for a career in transit management.

Certificate Implementation

The transit management certificate is part of the CTP, so in order to implement the track the committee completed three steps. These include gaining approval for a new focus area from the LAUP department head, revising the CTP Program Description and Degree

Requirements document, and receiving final approval from the department heads of Bush School, Civil Engineering, and the Mays Business School.

- Representatives of the committee met with the LAUP department head on May 9, 2012. The department head approved the proposed format and electives for the Transit Management focus area.
- The committee made final modifications to the CTP Program Description and Degree Requirements document on May 10, 2012.
- The committee sent the revised document to the department heads of Bush, Civil Engineering, and the Mays Business School on May 15, 2012.

Student Participation

The committee engaged student participation in the transit management certificate development process. Lana Wolken of TAMU Transit Services provided contact information of four undergraduate students that work for Transit Services. The committee contacted the students and asked a series of questions. Students were receptive to the idea, but had mixed thoughts regarding whether the transit management focus area would be attractive to other transit employees on campus. Appendix B contains a summary of the student responses.

The student conversations were insightful for understanding the interest of undergraduate transit employees. Interest may grow by making the transit management focus area visible among transit employees.

Overcoming Obstacles

The committee encountered obstacles during the development of the transit management certificate. First, LAUP will not offer the desired “focus foundation” course—PLAN 670: Urban Public Transportation—over the next several years. LAUP plans to incorporate the curriculum from this course into PLAN 673: Design for Sustainable Transportation and PLAN 672: Transportation and the Environment. The committee made PLAN 670 the required course during years LAUP offers the course; however, in the interim, PLAN 673 is the core focus foundation course.

The committee determined a transit internship would perhaps be more appropriate for transit management students than the required capstone course (PLAN 678). However, requiring an internship specific to the transit industry in lieu of the PLAN 678 capstone course necessitates a major curriculum change in the CTP. Hence, the committee opted to keep the capstone requirement for the transit management focus area with the caveat that transit internships and transit-related projects in CTP courses would be strongly encouraged, although not formally required.

Project Outcomes

The efforts of the committee resulted in the creation of a fourth focus area for the CTP. The additional focus area led to a revision and update of the Graduate Certificate in Transportation Planning Program Description and Degree Requirements (see Appendix C).

The list below provides additional key outcomes of the project:

- TTI and LAUP worked together to modify the Certificate in Transportation Planning Program Description and Degree Requirements to include a fourth focus, Transit Management.
- LAUP sent the revised Graduate Certificate in Transportation Planning Program Description and Degree Requirements to University Senate for approval June 15, 2012.
- The focus area development process engaged the interest from multiple academic departments at Texas A&M University.
- The Transit Management focus area provides the only formal academic curriculum in public transportation in Texas (there are very few total in the United States).
- The framework for the focus area is suitable for future continuing education opportunities among mid-career professionals.
- The multidisciplinary nature of the transit management focus area is attractive to students in varying fields of study.
- The LAUP Department will offer the focus area starting in Fall 2012.

Outreach Plan and Recommended Next Steps

The committee outlined several next steps for the transit management focus area of the CTP. In order to ensure the transit management focus area becomes known among the student body, the committee will initiate the following activities:

- Activity 1:** Send CTP information to departmental listservs and the TAMU transit listserv intermittently throughout the next few academic school years.
Responsible Party - TTI.
Schedule - Recurring twice per semester
- Activity 2:** Arrange for the CTP coordinator to speak during the introductory courses of LAUP, Bush School of Government and Public Service, Civil Engineering, and Mays Business School.
Responsible Parties - LAUP and TTI.
Schedule - Recurring at beginning of each academic year
- Activity 3:** Update the LAUP website to reflect the updated CTP Program Description and Degree Requirements.
Responsible Party - LAUP.
Schedule - August 2012
- Activity 4:** Create an advertising flyer to post in the participating academic departments and at TAMU Transit headquarters.
Responsible Party - TTI
Schedule - Recurring twice per semester
- Activity 5:** Reach out to Texas Department of Transportation (TxDOT) (and surrounding DOTs) to make information on the program known and to set up meetings to discuss future program possibilities.
Responsible Party - TTI.
Schedule - August 2012

Activity 6: Reach out to transit agencies in Texas and surrounding states to inform about the program to identify agencies interested in supporting internships.
Responsible Party – TTI.
Schedule – August, September, and November 2012

As mentioned in the section regarding obstacles, the loss of PLAN 670: Urban Public Transportation eliminates the only course solely focused on public transportation planning and operations. In order to ensure that students pursuing the transit management focus will obtain sufficient education and knowledge in public transportation, the committee will perform the following:

- Ensure that course material within PLAN 670 is effectively incorporated into PLAN 672 and 673.
- Engage guest speakers for PLAN courses and BUSH courses.
- Engage guest speakers for student organizations (Association of Student Planners, TAMU Institute of Transportation Engineers meetings, etc.).

Implementing an eCertificate

The creation of the eCertificate in Transportation Planning with UTCM Project 10-02-56 provides a unique opportunity to public transportation professionals. Once the eCertificate is implemented, mid-career professionals will have the opportunity to complete coursework required for the CTP. This will allow individuals to remotely obtain training specific to public transit and earn transportation planning certification. The program should greatly increase demand on the transit management focus within the certificate.

Identifying Future Champions of Transit Management

The transit management program has opportunity for growth in Texas and in the surrounding states. TTI has identified the industry need for the program, and TxDOT along with multiple representatives from transit agencies in Texas have expressed interest in such a program. To maintain the program's viability and promote future growth/development, the committee must engage additional stakeholders. By placing students in internships across Texas and potentially in surrounding states, TTI can identify additional champions for the program's growth. By gaining program sponsors, the committee can undertake additional outreach opportunities and further develop the program to become available to more individuals involved in public transportation.

The following list provides potential future program sponsors:

- TxDOT.
- Transit agencies in Texas and surrounding states.
- Federal Transit Administration.
- American Public Transportation Association.

Conclusions

The implementation of the transit management focus area as part of the Certificate in Transportation Planning in Fall 2012 provides students the unique opportunity to gain applicable knowledge to pursue a career in public transportation. The certificate advisory committee's efforts to craft a curriculum from available courses in the Department of Landscape Architecture and Urban Planning, Department of Civil Engineering, Mays Business School, and Bush School of Government and Public Service provide a foundation for students with a passion for learning more about public transportation.

The development of the focus area provides a first step in providing formal transit education in Texas. Next steps include developing a program for placing students in transit-related internships, creating opportunities for transit professionals to speak to students on the Texas A&M University campus, and finally, offering the certificate focus area as part of the Certificate in Transportation Planning eCertificate. The offering of the eCertificate will make the program available to mid-career professionals working remotely, anywhere in the world. The committee expects the program to have a positive impact on the transit industry inside and outside Texas.

Appendix A – Courses Considered for Curriculum

Course No.	Title	Description
PSAA 611	Public Policy Formation	Examination of public policy formation processes in the United States, with emphasis on the federal level
PSAA 617	State and Local Government	Gain a practical working knowledge of institutions and processes through which state and local policy are made and implemented
PSAA 623	Budgeting in Public Service	Introduce students to public finance and budgeting
PSAA 634	Public Management	Assess three critical aspects of public management; role of management in public sector, validity of argument that government should be run like a business and tools public managers need to be effective
PSAA 636	Grant and Contract Management	Examines use of contracts and grants in providing social services. Explores theoretical background of government contracts and grants; the management of third-party services from the perspectives of government agencies, private sector companies, and non-profit organizations, and the skills to write effective grant and contract proposals.
PSAA 637	Decision Making in Gov't and Public Service	Introduce to the study and practice of judgment and decision-making processes in government and administrative settings.
PSAA 648	Performance Management in the Public and Nonprofit Sectors	Students will examine public sector performance management and measurement as tools for improving strategic planning, resource allocation, organizational learning, internal operational practices, and internal and external accountability. They will apply their learning to the development of a particular organization's performance measurement system.
PSAA 661	Public Personnel Administration	Organization and operation of civil service personnel systems in American governments.
PSAA 616	Public Organization in a Pluralistic Society	Examination of how public policy issues are contested and shaped by the major cleavages in American society, such as race and ethnicity, economic and social class, and gender; strategies for building consensus across these divisions. Prerequisites: Graduate classification.
PSAA 622	Public Finance	Framework for positive and normative economic analysis of public sector spending and taxation; application of fundamental analytical principles of public finance to current public policy
BUSH 601	Leadership and Public Administration	Overview of the field of public administration theory and practice of leadership
BUSH 631	Quantitative Methods in Public Mgmt I	Introduction to common methods for social and policy analysis, evaluation, and survey research; emphasis on the performance of social and policy analysis
BUSH 632	Quantitative Methods in Public Mgmt II	Numerous formal aspects, methodologies, and decision making useful in public management including benefit-cost analysis, program evaluation, data analysis, and formulation of results and conclusions

Course No.	Title	Description
CVEN 632	Engineering Economics	Some of the economic principles discussed may be applicable to transit (benefit-cost analysis, etc.). Engineering and economic principles for transportation systems; engineering evaluation using methods of travel demand, costs, equilibrium, and pricing; use of economic principles for the finance, engineering, and management of transportation systems.
CVEN 672	Engineering and Urban Transportation Systems	Characteristics of transportation engineering systems; transportation engineering data collection; modeling effects of engineering project planning, trip generation, trip distribution, mode choice, and traffic assignment; use and interpretation of engineering modeling results; engineering project analysis. Prerequisite: Graduate classification in engineering or urban and regional planning or approval of instructor.
CVEN 689	Advanced Engineering Systems	We talk about optimization techniques, with scheduling and routing being one of the topics covered.
CVEN 618	Traffic Engineering Operations	Advanced theory and application of traffic control; signalization and freeway operations. Prerequisite: CVEN 457 or equivalent.
CVEN 635	Street and Highway Design	Advanced concepts of the design of streets and highways, design criteria, controls and standards for design alignment, cross section, intersections and interchanges, and environmental impacts of surface transport facilities. Prerequisite: CVEN 456 or equivalent.
PLAN 612	Transportation in City Planning	Comprehensive overview of the role of transportation in society.
PLAN 670	Urban Public Transportation Planning	Planning, operations, fiscal, management, and legal aspects of urban, rural, and regional public transportation modes; preparation of transportation systems program elements.
PLAN 674	Transportation Systems Analysis	Introduces basic concepts and techniques of modeling, analyzing, and solving problems in transportation systems planning, operations, management, and design within a unified framework for transportation systems analysis. Includes: disaggregate demand theory and application, activity analysis and land use forecasting, network optimization stochastic processes, queuing models, and simulation. Prerequisite: CVEN 672 or approval of instructor.
PLAN 673	Design for Sustainable Transportation	Introduce planning and design principles, techniques, and examples for achieving sustainable transportation; transit-oriented development, neo-traditional design, traffic calming, non-motorized travel, and smart growth; car sharing, parking pricing, location-efficient mortgage, and alternative vehicles and fuel technologies. Prerequisite: Graduate classification.
PLAN 626	Advanced GIS in Landscape Architecture and Urban Planning	Continuation of GIS in Landscape Architecture and Urban Planning PLAN 625. Topics include advanced spatial analysis technology: emphasis on urban planning, landscape architecture, land development, hazard management, and related applications to issues. Prerequisite: PLAN 625.

Course No.	Title	Description
PLAN 676	Transportation Investment Decisions	The course provides the graduate-level student with an overview of the elements of transportation investment decisions including transportation supply, demand, finance, and economic impact.
PLAN 678	Applied Transportation Studio	This course provides a practical overview of urban planning and transportation topics, including transportation-land use, functional classification, thoroughfare and land use planning, site planning, traffic impact analysis, access management, and site design. Prerequisite: Approval of instructor.
FINC 612	Finance for the Professional	Focuses on investment and financing decisions in corporate firms. Emphasizes principles, techniques, and applications in corporate finance, including: risk and return, capital budgeting, discounted cash flow valuation, capital structure, and payout policy.
GEOG 660	Applications in GIS	Integrates spatial analysis and modeling with GIS for environmental and socio-economic applications.
GEOG 616	Urban Geography	Spatial patterns and processes of urban systems; growth and sprawl; environmental impacts; residential choice models; political fragmentation; economic development; power and privilege; place-based identity.
MGMT 614	Managing People in Organizations	Procurement and management of people in organizations including human resource management principles and analysis of how organizations function; performance appraisal, compensation, training, leadership, group dynamics, decision making, control mechanisms, and organizational change processes. Classification 6 students may not enroll in this course. Prerequisite: Enrollment is limited to BUAD classification 7.
MGMT 620	Managing Human Resources	Survey of human resource management; formulation and implementation of human resource strategy addressed for areas including planning, recruitment, selection, job choice, training, development, appraisal, compensation, benefits, labor relations, international human resource issues, and legal compliance. Prerequisite: Graduate classification.
MGMT 622	Organizational Staffing	Foundations and operating aspects of recruitment, selection and placement in various types of organizations; coverage of scientific and legal issues affecting human resource selection decisions from a managerial perspective; examination of the usefulness of various methods used in job analysis, selection, and performance appraisal; introduction to "job match" from various perspectives.
MGMT 655	Survey of Management	Management concepts and applications important to managers in all types and sizes of organizations; includes: strategic planning, goal setting, control and managerial ethics; decision making, organizing, human resource management, including staffing, performance appraisal and compensation; leadership, motivation, communication, and group processes; achieving organizational quality and managing in a global environment. Prerequisite: Graduate classification. Note: This course may not be used for elective credit by a master's candidate in business administration.

Course No.	Title	Description
MGMT 675	Leadership in Organizations	Review of research on procedures, styles, and methods of leadership, supervision, management, and administration; all aspects of leader role behavior, both in practice and in research; areas in need of further research. May be repeated for up to 3 hours credit. Prerequisite: Graduate classification.
MGMT 630	Behavior and Organizations	Organizational behavior theory, research and applications, focuses on the individual and group levels of analysis; includes: learning principles, perceptions, attitudes, and job satisfaction, work motivation, job design, group properties, and processes, leadership, conflict, communication, personality influences on work attitudes and behaviors, work-life issues and job stress.
MGMT 639	Negotiations in Competitive Environments	Understanding prescriptive and descriptive negotiation theory as it applies to dyadic and multi-party negotiations, to buyer-seller transactions, dispute resolution, development of negotiation strategy and management of integrative and distributive aspects of the negotiation process.
MGMT 658	Managing Projects	Application of management processes to complex interdisciplinary organizational environments through the study of program and project management; adoptions of traditional management theories to the project environment; master typical project management microcomputer software for project planning; resource allocation; project budgeting; and control of project cost, schedule, and performance.

Appendix B – Student Questions and Responses

- Question: How did you get into transit?
Response: *Each of the students needed a job. They saw transit was hiring and applied.*
- Question: Are you interested in transit as a career?
Response: *Each student had something in mind after graduation other than a career in transit. However, one individual plans on attending the Bush School and might consider looking into the transportation certificate – specifically the transit management certificate.
One student said some transit student employees might be more interested in staying in transit if they cannot find a job after graduation.*
- Question: What do you enjoy about your job? Specific areas of interest?
Response: *The students stated that it was convenient to work for transit. The schedules are very flexible and it is on campus. These students had built up seniority and can have the schedule they want. They also said that the job is fairly easy – other than very strict in-house policies.*
- Question: Do you plan on getting your Master’s degree?
Response: *One student does. Another student said that it depends on if he/she can find a job.*
- Question: Would you be interested in getting a transit management certificate?
Response: *One student said that he would look into it if he is admitted to the Bush School.*
- Question: What types of classes do you think should be part of the certificate program?
Response: *The students thought that our list of electives was good; however, one student mentioned that possibly a safety course or public health course could be considered as an elective.*
- Question: Do you know other co-workers that would be interested in something like this?
Response: *One student stated that he/she did know a couple of students that enjoy working in transit and would be interested.
One student thought it would be more popular if undergrads could get the certificate.
One student said it would depend on if he/she can get a job after graduation.*

Question: Do some students enjoy working in transit?

Response: *Yes, many students do.*

One student mentioned that some may do the job because that is all they can find, but don't exactly enjoy it.

Question: What is the best way to reach out to students interested in transit?

Response: *There is a transit employee listserv that would be good to get the word out.*

Advertising in the applicable departments.

Advisors within particular departments have access to additional listservs.

**Appendix C – Certificate in Transportation Planning Program
Description and Degree Requirements**

**THE GRADUATE CERTIFICATE
IN TRANSPORTATION PLANNING**

**Program Description
and Degree Requirements**

REVISED: May 10, 2012

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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 four critical areas: Multimodal Systems Planning, Transportation and Urban Design, Transportation and Public Policy, and Transit Management. 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), Hazards Reduction and Recovery Center (College of Architecture), Department of Civil Engineering, Texas Transportation Institute (TTI), and the 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 an applied studio course that provide 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 courses in one of four specific areas of professional focus. Students will be required to complete nine (9) credits for the following focus areas: *Multimodal Systems Planning*, *Transportation and Urban Design*, *Transportation and Public Policy*, and *Transit Management*. Each of the four focus areas is designed to meet critical needs within the transportation profession, and is tailored towards securing the student's 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 as 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)

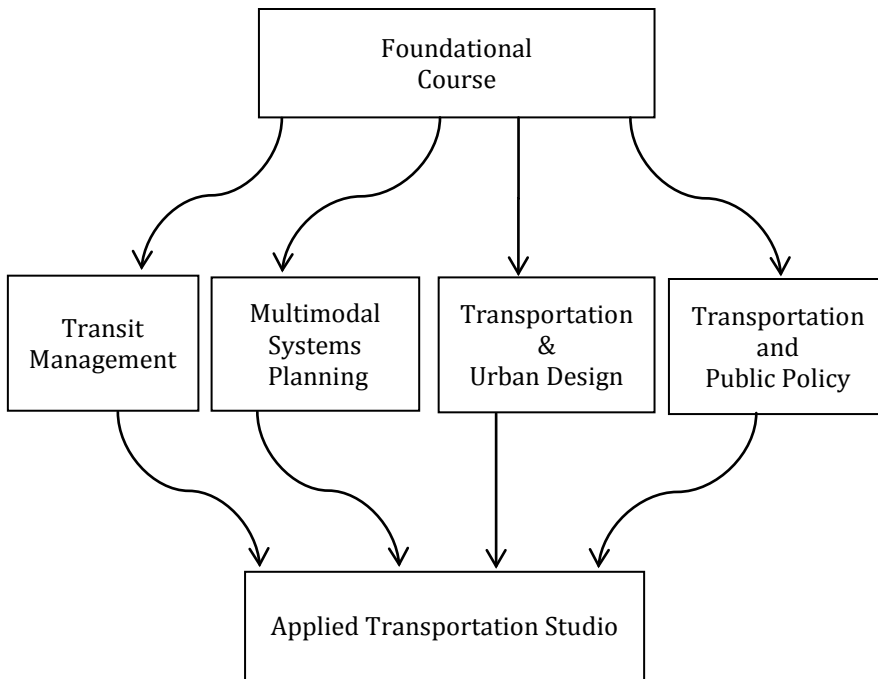
- PLAN 670: Urban Public Transportation Planning.

Electives: Multimodal Systems Planning (6 Credits)

- CVEN 618: Traffic Engineering: Operations.
- CVEN 672: Engineering and Planning Urban Transportation Systems.
- PLAN 626: Advanced GIS in Landscape Architecture and Urban Planning*.

- PLAN 650: Disaster Response Planning.
- PLAN 673: Design for Sustainable Transportation.
- PLAN 674: Transportation Systems Analysis.
- PLAN 676: Transportation Investment Decisions.

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



Part 1: Foundation
3 Credits

Part 2: Focus Area
9 Credits

Part 3: Studio
3 Credits

Certificate in Transportation – Curriculum Structure

**Total
15 Credits**

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 and 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 and 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):

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

c. Transportation and Public Policy

Total public expenditures in transportation infrastructure total more than \$170 billion per year,¹ with many public funding programs tied to specific program grants that direct how transportation system investments are made. The *Transportation and Public Policy* focus area is intended to develop policy innovators who are able to tailor public policy and finance to address emerging

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

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.

d. Transit Management

The focus area in *Transit Management* seeks to address the growing demand for highly qualified and well-trained professionals in the public transit industry. In the state of Texas alone, there are over 70 urban and rural transit systems, in addition to more than 135 operators providing transit services to the elderly and individuals with disabilities. According to the American Public Transportation Association (APTA), more than half of the transit workforce will retire by 2020, highlighting the need to train the next generation of public transit professionals. While the need for new professionals in the public transit industry is great, very few university programs offer specific instruction in transit management and operations. The focus area in *Transit Management* seeks to address this gap by providing students with skills and knowledge in transit operations, management techniques, and critical analysis aimed at addressing this important professional need. Students focusing in *Transit Management* will have the necessary skills to pursue careers in the public transit industry, and will typically find employment with federal agencies such as the Federal Transit Administration (FTA), regional and metropolitan transit agencies such as Dallas Area Rapid Transit (DART) and Houston METRO, small town and rural transit agencies, and specialized transit agencies providing demand response and paratransit services.

Students choosing the Transit Management focus area are strongly encouraged to pursue an internship involving work in transit management and planning. Efforts will be made to provide resources and information about internship opportunities and to help place students in transit management internships.

Required: Focused Foundation in Transit Management (3 Credits)

- PLAN 670: Urban Public Transportation Planning*.
- PLAN 673: Design for Sustainable Transportation.

Electives: Transit Management (9 Credits)**

Planning and Civil Engineering

- CVEN 618: Traffic Engineering: Operations.
- CVEN 672: Engineering and Planning Urban Transportation Systems.
- PLAN 672: Transportation and the Environment.
- PLAN 674: Transportation Systems Analysis .

Management, Policy and Finance

- MGMT 630: Behavior and Organizations.
- MGMT 639: Negotiations in Competitive Environments.
- MGMT 655: Survey of Management.
- MGMT 658: Managing Projects.
- MGMT 675: Leadership in Organizations.
- PLAN 676: Transportation Investment Decisions.
- PSAA 611: Public Policy Formation.
- PSAA 622: Public Finance.
- PSAA 634: Public Management.
- PSAA 636: Grant and Contract Management.
- PSAA 648: Performance Management in the Public and Nonprofit Sectors.

* Students are advised to take PLAN 670 if available, but PLAN 673 will also satisfy this requirement.

** Students will be required to take one course under *Planning and Civil Engineering* and two courses under *Management, Policy and Finance*.

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:

- Elise Bright, Landscape Architecture and Urban Planning.
- Mark Burris, Civil Engineering.
- Bill Eisele, Texas Transportation Institute, Landscape Architecture and Urban Planning.
- David Ellis, Texas Transportation Institute, Landscape Architecture and Urban Planning.
- Gene Hawkins, Civil Engineering.
- Kenneth Joh, Landscape Architecture and Urban Planning.
- Chanam Lee, Landscape Architecture and Urban Planning.
- Ming-Han Li, Landscape Architecture and Urban Planning.
- Michael Lindell, Landscape Architecture and Urban Planning.
- Eric Lindquist, Bush School of Government and Public Service.
- Tim Lomax, Texas Transportation Institute, Landscape Architecture and Urban Planning.
- Forster Ndubisi, Landscape Architecture and Urban Planning.
- Dennis Perkinson, Texas Transportation Institute, Landscape Architecture and Urban Planning.
- Luca Quadrifoglio, Civil Engineering.
- Katherine Turnbull, Texas Transportation Institute, Landscape Architecture and Urban Planning.
- Douglas Wunneburger, Landscape Architecture and Urban Planning.
- Ann Bowman, 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		48

* 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 I	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		48

* 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 Planning</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
	LAND 693: Professional Study	4
	<i>PLAN 678: Applied Transportation Studio</i>	<u>3</u>
		10
Minimum Hours Standard Degree		52

* 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
	<i>CVEN 672: Engineering and Urban Transportation</i>	3
	<i>PLAN 612: Transportation in City Planning</i>	<u>3</u>
		9
Spring Semester I	CVEN 618: Traffic Engineering- Operations	3
	CVEN 681: Seminar in Transportation	1
	<i>PLAN 673: Design for Sustainable Transportation</i>	3
	<i>PLAN 678: Applied Transportation Studio</i>	<u>3</u>
		10
Summer Semester I	Research Hours	6
Fall Semester II	<i>CVEN 635: Street and Highway Design</i>	3
	Elective	3
	Research Hours	<u>3</u>
		9
Minimum Hours Standard Degree		34

* 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 in Civil Engineering that is focusing on Transportation and Urban Design.

Part III-H: 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	<u>3</u>
		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		48

* 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 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**

Submit this form to the Certificate Coordinator

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)

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 Coordinator

Date

<u>Graduate Programs Office</u>	<u>CTP Program Office</u>	<u>Student</u>	Chair, Student's <u>Graduate Advisory Committee</u>
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**PETITION TO GRADUATE AND FINAL PAPER PROPOSAL
GRADUATE CERTIFICATE IN TRANSPORTATION PLANNING PROGRAM**

Submit this form to the Certificate Coordinator

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
Coordinator

Certificate

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



University Transportation Center for Mobility™

Texas Transportation Institute

The Texas A&M University System

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