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An eCertificate Program in Transportation Planning

Final Report

Forster Ndubisi and Kenneth Joh

Performing Organization

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

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16. Abstract <p>In this project, researchers developed a proposal to extend the delivery of the recently developed Graduate Certificate in Transportation Planning at Texas A&M University (TAMU) to a wider audience via distance education (online or eCertificate). While the need for an interdisciplinary approach to transportation is widely recognized by the professional community, there are few educational programs that address the field of transportation in a truly comprehensive, interdisciplinary manner. The TAMU university-wide graduate Certificate in Transportation Planning was established in August 2008 to address this need. The certificate provides an interdisciplinary perspective on how economics, public policy, finance, and urban design influence the effectiveness of transportation systems.</p> <p>This certificate has proved to be very successful. However, a limitation has been its availability to graduate students only at TAMU in College Station. This project sought to convert four courses in the existing certificate into online courses, to develop a proposal for delivering the courses via distance education, and to move the proposal through the TAMU approval processes. The eCertificate will increase access to transportation courses and Texas A&M's transportation curriculum substantially, and it will strengthen Texas A&M as a national and global leader in the education of transportation professionals.</p>					
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An eCertificate Program in Transportation Planning

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Final Report
UTCM 11-13-72
Project Title: An eCertificate Program in Transportation Planning

University Transportation Center for Mobility™ Texas Transportation Institute

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- Ken Joh, PhD, Landscape Architecture and Urban Planning and Texas Transportation Institute.
- Theresa Qu, PhD, Texas Transportation Institute.
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TABLE OF CONTENTS

List of Figures	4
Executive Summary	5
Project Significance	7
Project Outcomes	8
E-Certificate Development and Approval Processes.....	8
Online Certificate Course Development and Delivery	9
Project Activities, Timeline, and Benchmarks	11
Conclusion	12
Appendix A—Proposal: an eCertificate in Transportation Planning	13
Appendix B—Sample Checklist and Detailed Weekly Schedule for Online Course Delivery	27
Checklist.....	27
Detailed Weekly Schedule.....	27
Appendix C—Course Materials for Online Transportation Planning Courses	31

LIST OF FIGURES

Figure 1: eCertificate in Transportation Planning Curriculum Structure. 9

EXECUTIVE SUMMARY

In this project, researchers developed a proposal to extend the delivery of the recently developed Graduate Certificate in Transportation Planning at Texas A&M University (TAMU) to a wider audience via distance education (online or eCertificate). While the need for an interdisciplinary approach to transportation is widely recognized by the professional community, there are few educational programs that address the field of transportation in a truly comprehensive, interdisciplinary manner. The TAMU university-wide graduate Certificate in Transportation Planning was established in August 2008 to address this need. The certificate provides an interdisciplinary perspective on how economics, public policy, finance, and urban design influence the effectiveness of transportation systems.

This certificate has proved to be very successful. However, a limitation has been its availability to graduate students only at TAMU in College Station. This project sought to convert four courses in the existing certificate into online courses, to develop a proposal for delivering the courses via distance education, and to move the proposal through the TAMU approval processes. The eCertificate will increase access to transportation courses and Texas A&M's transportation curriculum substantially, and it will strengthen Texas A&M as a national and global leader in the education of transportation professionals.

This project had three key components:

- Proposal development and university approval process.
- Online course development and delivery.
- Project activities, timelines, and benchmarks.

The existing transportation certificate involves a 15-credit sequence comprised of one required foundational course (three credits), three focus-area courses (nine credits), and a capstone course (three credits) providing a comprehensive overview and application of the skills and techniques learned during the completion of the certificate program. The focus-area courses are:

- Multimodal systems planning.
- Transportation and urban design.
- Transportation policy.

Although not included as a component of this project, initiatives are underway to include a fourth concentration area focused on transit management through another grant from the University Transportation Center for Mobility™ (UTCM). In the proposed eCertificate program, a comprehensive examination may be substituted for the capstone course.

A proposal for an eCertificate was developed by the principal investigator (PI) and is currently moving through the university approval processes. It was approved at the departmental and college levels. It was subsequently approved by the Texas A&M Graduate Curriculum Committee and the University Senate in January 2012. It is currently in the Vice Provost's Office. Efforts are currently underway to escalate it to the President's Office for approval and forwarding to the Board of Regents and the Higher Education Coordinating Board. It is expected that the eCertificate will be implemented by September 2013.

Findings from a previous logistic assessment study (UTCM 10-02-56, November 2011) established that Texas A&M's Instructional Technology Services (ITS) manages a virtual learning platform supported by an extensive repertoire of e-learning tools, software, and applications that is adequate to deliver the proposed eCertificate in Transportation Planning. The findings also indicated that a hybrid course delivery system that blends traditional face-to-face instruction with online instruction will be very effective in delivering the eCertificate courses to a wider audience.

Building upon the outcomes of the assessment study, the study team organized seven workshops over an 18-month period to train faculty and graduate students on developing and delivering online courses, working very closely with ITS. The last workshop was conducted in March 2012 over a two-day period by Dr. Molinari, an expert in online course delivery from the University of Baltimore. These workshops covered all aspects of online course development and delivery, including pedagogy, delivery formats, e-tools, assessment, and synchronous (real-time) and asynchronous (interaction through virtual course material access) modes of delivery. The workshops proved very effective in preparing faculty to convert their existing courses into online courses, or to develop new ones.

Drawing on information from the workshops, the PI developed a consistent format for course development and delivery. Course instructors used the format to guide the development of four online courses for the eCertificate program, and those courses were completed in August 2012. The courses are PLAN 672 (Transportation and Environment), PLAN 673 (Sustainable Transportation), PLAN 674 (Transportation Systems), and PLAN 676 (Transportation Investment Decisions). All except PLAN 672 were existing courses. The project team expects to teach two courses (PLAN 674 and PLAN 676) in the spring semester of 2013. Full course delivery will begin after the eCertificate has been approved by the Higher Education Coordinating Board.

Dr. Ken Joh, who is currently the coordinator of the existing Transportation Certificate, will coordinate the eCertificate program, along with Dr. Wei Li, until enrollment in the program grows substantially. The existing administrative processes established in spring 2008 to process student admissions and guide students through the current program will be utilized as needed for the eCertificate program. The existing Certificate Council comprised of faculty from the participating units that provide advisory input regarding the administration of the certificate program will also provide input for the eCertificate program.

PROJECT SIGNIFICANCE

The field of transportation has become increasingly complex and multifaceted. While the need for an interdisciplinary approach to transportation is widely recognized by the professional community, there are few, if any, educational programs that address the field of transportation in a truly comprehensive, interdisciplinary manner. To address this need, a Texas A&M University (TAMU) university-wide graduate-level Certificate in Transportation Planning was established in August 2008. This program has proved to be very successful.

The purpose of this project was to develop a proposal to extend the delivery of the graduate certificate to a much wider audience beyond Texas via distance education, which is a form of learning that takes place when the instructor and student are separated by space and/or time. The gap between the two can be mediated through the use of technology and related educational platforms. This is the third part of a three-phase project focused on developing and delivering transportation education in a truly interdisciplinary manner to a wide variety of audiences, irrespective of location.

Phase 1 involved the establishment of the Texas A&M university-wide Certificate in Transportation Planning in August 2008. The certificate provides an interdisciplinary perspective on how economics, public policy, finance, and urban design influence the effectiveness of transportation systems. By August 2010, five core certificate courses were delivered successfully: three courses were restructured, and two were created. A total of 130 students have taken these certificate courses, and 31 students have received certificates to date. Phase 2 involved an assessment of the feasibility and logistics of extending the delivery of the certificate to a wider audience, specifically professionals in selected Texas metropolitan areas interested in transportation, through the establishment of an executive certificate (flexible and condensed format for course delivery).

Preliminary findings from the logistic assessment indicated that (a) a hybrid course delivery system that blends traditional face-to-face instruction with online instruction is very effective in delivering eCertificate courses to a wider audience, but full online capability can extend the delivery of certificate courses beyond Texas, thereby increasing student access substantially; (b) an executive program further increases access as well as flexibility in course delivery by targeting working professionals looking for a real-world educational platform; (c) distance delivery of certificate courses is very effective when it blends synchronous (real-time) and asynchronous (interaction through virtual course material access) modes of delivery; and (d) Texas A&M Instructional Technology Services (ITS) manages a virtual learning platform supported by an extensive repertoire of e-learning tools, software, and applications such as Blackboard Vista, video conferencing tools, video Internet streaming systems, and Second Life 3D Virtual World. For instance, online certificate programs offered by the Bush School of Government use the ITS system for course delivery.

This project sought to (a) develop and move the eCertificate in Transportation Planning proposal through the university approval processes (distance education proposals are ultimately approved by the Texas Higher Education Coordinating Board); (b) convert three existing and one new certificate course for online delivery in a condensed, flexible format through the virtual learning platform supported by TAMU's ITS; and (c) develop mechanisms for implementing the eCertificate.

PROJECT OUTCOMES

The project outcomes were organized around three themes:

- eCertificate development and approval processes.
- Online certificate course development and delivery.
- Project activities, timelines, and benchmarks.

eCertificate Development and Approval Processes

The project team, under the leadership of the principal investigator (PI), developed a proposal for an eCertificate. The proposal is presented in Appendix A. It addresses numerous issues, including the rationale for establishing an eCertificate; student enrollment; courses scheduled for conversion or development for online delivery; delivery systems using synchronous (real-time) and asynchronous (interaction through virtual course material access) modes; virtual platforms for course delivery; instructional faculty and staff support; faculty training for online course development and delivery; course and certificate assessment plans; and cost effectiveness for delivering an eCertificate. Highlights of the proposal are as follows:

- The eCertificate in Transportation Planning involves a 15-credit sequence comprised of one required foundational course (three credits), three focus-area courses (nine credits), and a capstone course (three credits) providing a comprehensive overview and application of the skills and techniques learned during the completion of the certificate program. Figure 1 depicts the overall structure of the 15-credit certificate program. In the proposed eCertificate program, a comprehensive examination may be substituted for the capstone course. A proposal to add a fourth focus area in transit management is currently underway (it is not a part of the current project).
- The proposed program differs in three minor ways from the existing certificate program. First, the prospective student does not necessarily need to be enrolled in a graduate degree at the university to be enrolled in the certificate since it is targeted to place-bound students. As such, students can enroll directly into the program similar to the way the Bush School enrolls students into the online certificates it offers. Second, the certificate does not need to be awarded concurrent with a graduate degree, as is required in the existing Certificate in Transportation Planning. Third, the courses will be delivered as appropriate in a condensed and flexible (executive) format to increase access.
- Potential students who are not currently at Texas A&M University must have completed an undergraduate degree with good standing and be enrolled in the university as a non-degree student to be eligible to take certificate courses. The certificate will be awarded when students complete all the certificate requirements.

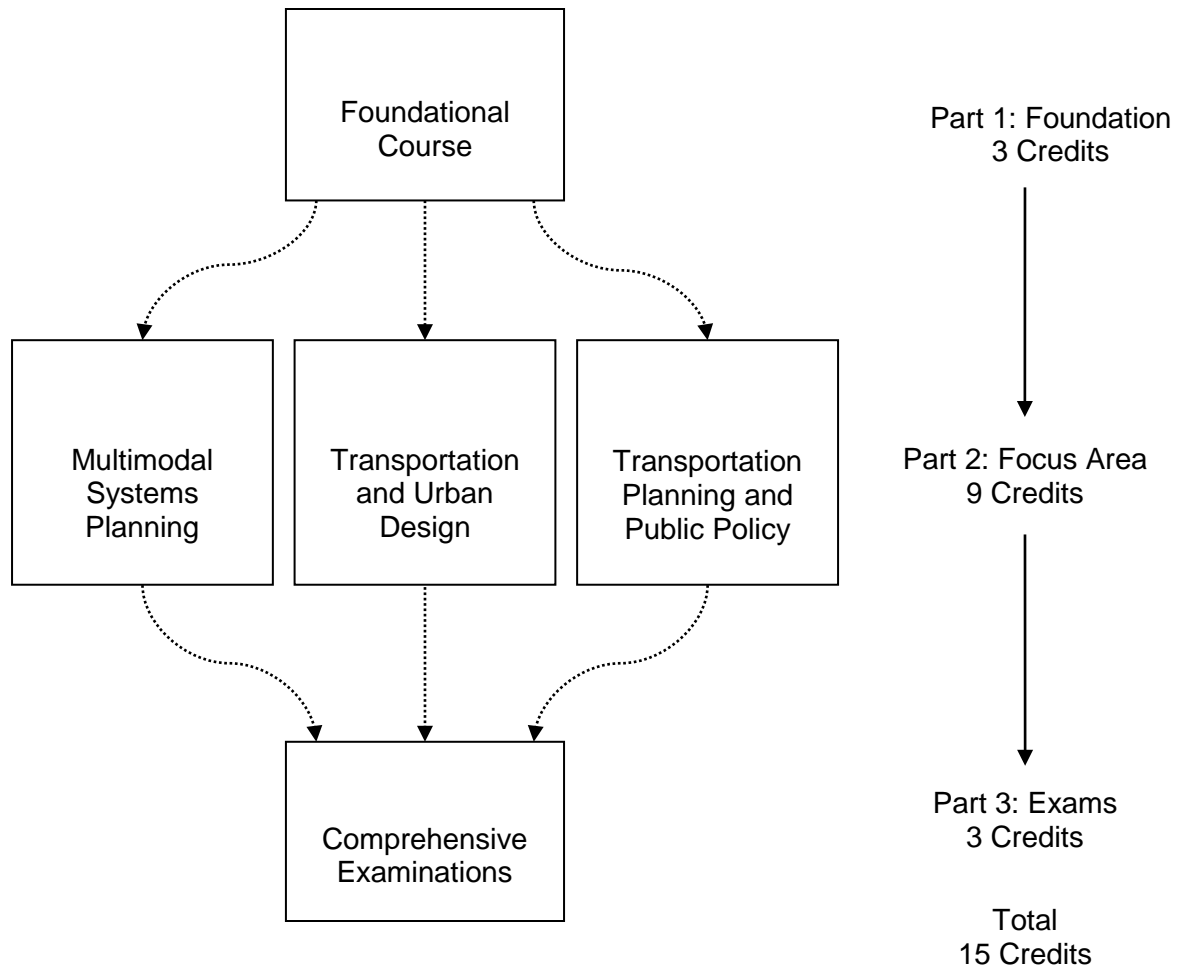


Figure 1: eCertificate in Transportation Planning Curriculum Structure.

The proposal is currently moving through the university approval processes. It was approved by the Department of Landscape Architecture and Urban Planning and the College of Architecture in September 2011. The proposal was then approved by the Texas A&M Graduate Curriculum Committee on November 3, 2011, and the University Senate in January 2012. It is now in the Vice Provost's Office. The project team is currently seeking appropriate support letters from certificate partners to enable it to move to the President's Office for approval and then to be forwarded to the Board of Regents and the Higher Education Coordinating Board. Assuming that all goes well, it is expected that the eCertificate will be implemented by September 2013.

Online Certificate Course Development and Delivery

The project team built on key findings of a logistic assessment study (UTCM 10-02-56, November 2011) that examined the feasibility of delivering and implementing the eCertificate in Transportation Planning to develop four online courses. The key findings used were as follows: (a) a hybrid course delivery system that blends traditional face-to-face instruction with online instruction is very effective in delivering eCertificate courses to a wider audience; (b) distance delivery of certificate courses is very effective when it blends synchronous (real-time) and asynchronous (interaction through virtual course material access) modes of delivery; and (c) the

Texas A&M virtual learning platform supported by Texas A&M ITS is adequate to deliver the proposed eCertificate in Transportation Planning. Texas A&M ITS, a unit under the vice president for technology, is the hub for technology-related services pertaining to online programs in the university including the proposed distance program in transportation planning. ITS also provides professional development opportunities and administers e-learning resources.

The proposed eCertificate courses were designed to utilize a fully interactive online format including asynchronous and synchronous delivery. Asynchronous activities include but are not limited to threaded discussions, video and audio presentations, written lectures linked to video and audio presentations, blogs and journals, shared documents, and shared online assessment. Synchronous activities include live chat and web conferencing including video and audio interactions, small group forums, student presentations, and live assessment methodologies. The university-wide learning management platform, Blackboard Vista (formerly Web CT Vista), will be used as the virtual platform for delivering the proposed online certificate. Delivery tools include QuickTime, Adobe Presenter, Podcasts, Audacity, Calibrated Peer Review, Camtasia, Snagit, and Centra Web Conferencing System.

To equip faculty with the skills and knowledge needed to develop and deliver effective online classes, the PI worked with ITS to design and deliver six tailored workshops (two to three hours each) for 12 departmental faculty members, including those that teach courses in transportation planning, as well as three graduate students. These workshops focused on designing and implementing effective online courses as well as the tools most appropriate for doing so. Topics covered included developing effective syllabi; managing grade books, discussion forums, and chat rooms; and using other content-management tools. Also covered were tools such as Audacity, Camtasia, and Centra Web Conferencing System. The PI organized a seventh workshop, which was held in March 2012 over a two-day period and led by Dr. Molinari, an expert on online course delivery from the University of Baltimore; that workshop reviewed all aspects of online course development and delivery. The workshops proved very effective in preparing faculty to convert their existing courses into online courses, or to develop new ones.

The project plan calls for the appointment of an instructional design specialist (IDC) to work with course instructors and coordinate the development/modification of course materials, design engagement activities, and integrate technology into the classroom. The IDC will serve as the interface between the faculty and ITS. The IDC hired for the project left the university so it was not feasible to hire another IDC within the project's timeframe. The project team under the leadership of the PI fulfilled the role.

To ensure a consistent format in the design and delivery of online certificate courses (as well as other courses taught in the department), the PI provided the course instructors with samples of course syllabi, a uniform template format, and a checklist for course development and delivery (see Appendix B for the checklist). Course instructors were required to use this format to guide the development of four online courses, which were completed in August 2012. The courses are PLAN 672 (Transportation and Environment), PLAN 673 (Sustainable Transportation), PLAN 674 (Transportation Systems), and PLAN 676 (Transportation Investment Decisions). All except PLAN 672 were existing courses.

Specific activities in course development and delivery included restructuring course objectives; developing audio/video lectures; creating discussion questions, student engagement exercises, and course assignments; and developing reading materials that supplement lecture materials. In short, course instructors were expected to design their courses to utilize a fully interactive online format including asynchronous and synchronous delivery.

The online certificate courses require enormous digital storage capacity. As such, a sample of the online course materials for each of the four courses (first three weeks) can be accessed virtually at http://tti.tamu.edu/documents/utcm/Ndubisi_11-13-72.zip (see Appendix C). Full course materials will be uploaded into the virtual learning platform when a course is scheduled for delivery. The project team expects to teach two courses (PLAN 674 and PLAN 676) in the spring semester of 2013. Full course delivery will begin after the eCertificate has been approved by the Higher Education Coordinating Board. Program faculty members that teach courses in transportation planning will be expected to continue to participate systematically and regularly in institutional professional development opportunities to maintain currency of technological expertise.

Project Activities, Timeline, and Benchmarks

Five key project activities were developed and implemented: (a) establish project team and identify course instructors; (b) develop proposal for eCertificate and move the proposal through university approval processes; (c) train faculty and graduate students to develop and deliver online courses; (d) convert three existing transportation courses (PLAN 673, PLAN 674, and PLAN 676) into online courses and create a new online course (PLAN 672); and (e) develop action plan for delivery of online courses and administration of eCertificate program. Forster Ndubisi (lead PI) provided overall project management and coordination for the development, approval, and implementation of the certificate program.

The project team comprised of the PI (Dr. Forster Ndubisi), co-PIs (Dr. Dumbaugh and Dr. Koh), and potential course instructors (Dr. Lomax, Dr. Perkinson, Dr. Ellis, and Dr. Eisele) was established in the spring semester of 2011. Over time, the project team changed. For example, Dr. Eric Dumbaugh left TAMU for Florida Atlantic University, and as such, he has not played a substantive role in the project. The course instructors also changed. Members of the final project team are Dr. Forster Ndubisi, Dr. Ken Koh, Dr. Chris Ellis, and Dr. Theresa Qu. Except for Dr. Ndubisi, the others are the course instructors for the proposed online courses.

The eCertificate proposal was completed in the summer semester of 2011, and the approval processes began in the fall semester of 2011. The proposal was approved by the Faculty Senate in January 2012 and is currently in the Office of the Vice Provost while awaiting additional support letters. Online programs including the eCertificate require final approval from the Texas Higher Education Coordinating Board. The project team expects the process to be completed within the next year, for delivery beginning September 1, 2013.

The PI organized seven tailored workshops (two to three hours each) for 12 departmental faculty members and three graduate students. These workshops focused on designing and implementing effective online courses as well as the tools most appropriate for doing so. The last workshop was held in March 2012. The workshops proved very effective in preparing faculty to convert their existing courses into online courses, or to develop new ones.

These workshops provided the foundation for developing a consistent format in the design and delivery of online certificate courses. Course instructors used this format to guide the development of four online courses for the eCertificate program, and the courses were completed in August 2012. These are PLAN 672 (Transportation and Environment), PLAN 673 (Sustainable Transportation), PLAN 674 (Transportation Systems), and PLAN 676 (Transportation Investment Decisions).

The delivery of the online courses will require the execution of a number of related tasks yet to be performed, namely (a) conversion of course materials into web-accessible formats; (b) upload of the web-accessible course materials into the virtual learning platform when courses are scheduled for delivery; (c) coordination of technology support for the courses with TAMU's ITS; (d) delivery of the courses through asynchronous and synchronous modes of delivery; and (e) assessment of effectiveness of online course delivery by instructional faculty and supervisor.

Dr. Ken Joh, the current coordinator of the existing transportation certificate will coordinate the eCertificate program in conjunction with a new transportation faculty member, Dr. Wei Li, until enrollment in the program grows enough to merit the appointment of a separate coordinator. The existing administrative processes established in spring 2008 to process student admissions and guide students through the current program will be utilized as needed for the eCertificate program.

CONCLUSION

It is expected that the approval processes for the eCertificate program will be completed within the next year for commencement beginning September 1, 2013. The current plan is to teach two online certificate courses (PLAN 674 and PLAN 676) in the spring semester of 2013. Full course delivery will begin after the eCertificate has been approved by the Higher Education Coordinating Board.

Marketing materials will be developed while awaiting the approval process and will be put in place once approval is completed. Emphasis will be on recruiting students into the program within the next two years. Plans are underway to include selected online courses delivered by the Bush School as electives in the eCertificate program.

This project will vastly increase access to transportation courses and Texas A&M's transportation curriculum and, as a result, increase access to the certificate for a much wider audience beyond Texas and the United States. Access to the eCertificate for working professionals looking for a real-world educational platform will be increased further as a result of (a) substituting a comprehensive exam for a project capstone course required in the current certificate program; (b) providing flexibility in the admission process; and (c) emphasizing executive education (condensed format for delivery).

The project will ultimately result in the restructuring of the existing courses, development of new course content, and implementation of a hybrid course delivery mode with full capacity for online delivery. In fact, the project team is currently restructuring the certificate's transportation planning courses and their mode of delivery to strengthen technology-mediated learning and to cover the skills and knowledge required to pass the Certified Transportation Planner examination of the American Institute of Certified Planners. Moreover, the online courses may be waived for students who have successfully completed the certificate's required courses and wish to enroll in the graduate professional program in urban planning at Texas A&M University.

APPENDIX A—PROPOSAL: AN ECERTIFICATE IN TRANSPORTATION PLANNING

This appendix contains a copy of the submitted proposal for the eCertificate in Transportation Planning.

2011

PROPOSAL: AN eCERTIFICATE IN TRANSPORTATION PLANNING



Texas A&M University

November 2011

**PROPOSAL FOR THE GRADUATE CERTIFICATE
IN TRANSPORTATION PLANNING BY DISTANCE (eCERTIFICATE)**

**Department of Landscape Architecture and Urban Planning
College Of Architecture
Texas A&M University, College Station**

REQUEST TO OFFER EXISTING DEGREE PROGRAM VIA DISTANCE

The Department of Landscape Architecture and Urban Planning (LAUP) in the College of Architecture at Texas A&M (TAMU), College Station, is seeking permission to offer the existing graduate Certificate in Transportation Planning via distance education (online to individuals) beginning August 2012.

Graduate eCertificate in Transportation Planning

The field of transportation has become increasingly complex and multifaceted. While the need for an interdisciplinary approach to transportation is widely recognized by the professional community, there are few, if any, educational programs that address the field of transportation in a truly comprehensive, interdisciplinary manner. Yet, increasingly, the transportation profession needs practitioners that can complement their traditional areas of expertise with a broader, interdisciplinary perspective of how economics, public policy, finance, and urban design influence the effectiveness of the transportation system. To address this need, a TAMU university-wide graduate Certificate in Transportation Planning was established in August 2008. This program has proved to be very successful. To date, five core certificate courses have either been restructured (three) or created (two) and delivered successfully. A total of 115 students have taken these certificate courses, and 30 students have received certificates to date.

A major limitation of the existing certificate program is that it is available to graduate students only at TAMU in College Station. Put differently, the certificate is not accessible to place-bound students, thereby limiting access. Through the many advances in technology, new degree program formats are providing the flexibility to meet the needs of today's university students who must balance family, work, and school. To address this limitation and ensure continued education of transportation professionals, LAUP is requesting permission to extend the delivery of the existing certificate via distance to a wider audience of professionals interested in transportation in selected metropolitan areas in Texas and beyond.

Preliminary indications suggest that an audience for the certificate exists in major metropolitan areas in Texas, especially Austin, Dallas, Houston, and San Antonio. Transportation professionals, therefore, will be positioned to receive a coherent interdisciplinary program in transportation at on-site and off-site locations.

The certificate will increase access, expand Texas A&M's transportation curriculum, and enhance the university's position as a national leader in transportation education. Additionally, the certificate serves as a stepping stone toward the pursuit of a Master in Urban Planning (MUP) degree since certificate courses are an integral part of the MUP curriculum. Finally, this request advances the imperatives of TAMU's **Education First** Initiative.

In support of this request, LAUP offers the following information:

A. Describe the delivery system(s) to be used.

The Certificate in Transportation Planning will utilize a fully interactive online format including asynchronous and synchronous delivery. Asynchronous activities will include but not be limited to threaded discussions; video and audio presentations, written lectures linked to video and audio presentations, blogs and journals, document sharing, and shared online assessment. Synchronous activities will include live chat and web conferencing including video and audio interactions, small group forums, student presentations, and live assessment methodologies. The university-wide learning management platform, Blackboard Vista (formerly Web CT Vista), will be the primary virtual platform for delivering the proposed online certificate. Delivery tools will include QuickTime, Adobe Presenter, Podcasts, Audacity, Calibrated Peer Review, Camtasia, Snagit, and Centra Web Conferencing System.

The platform and tools are currently managed by the Texas A&M Instructional Technology Services (ITS), which represents the hub for technology-related services pertaining to online programs. ITS also provides professional development opportunities, administers e-learning resources, and empowers instructors to use best practices in higher education to enhance student learning through technology. During the 2010/11 academic year and in preparation for the development and delivery of online courses, LAUP worked with ITS to design and deliver six specialized, tailored workshops (two to three hours each) for 12 departmental faculty members including those that teach courses in transportation planning, as well as three graduate students. These workshops focused on designing and implementing effective online courses as well as the tools most appropriate for doing so.

Topics covered include developing effective syllabi; managing grade books, discussion forums, and chat rooms; and using other content-management tools. Also covered are tools such as Audacity, Camtasia, and Centra Web Conferencing System. Program faculty members that teach courses in transportation planning are expected to continue to participate systematically and regularly in institutional professional development opportunities to maintain currency of technological expertise.

B. Indicate expected enrollment for five years.

Expected enrollment for the next five years is anticipated to be 10-15 graduate students per year. We expect that professionals taking transportation courses will be approximately 20-25 per year.

C. Confirm compliance with Sections of Subchapter E (Attach separately a certificate of compliance statement).

The College of Architecture certifies that the graduate Certificate in Transportation Planning to be delivered by distance meets the standards and criteria established in Chapter 4, Subchapter E of the Rules and Regulations of the Texas Higher Education Coordinating Board.

D. Attach in a tabular format, a list of the courses to be taught, including course number and title; the number of semester credit hours for each; and the mode of instruction for each. Indicate which courses have already been developed as distance courses and the timeline for others to be developed as distance courses.

See table in Attachment A.

E. Attach a chart showing semester credit hour requirements for the program, including total SCH.

See chart in Attachment B.

F. Attach a roster of instructional staff, following the format required by the Southern Association of Colleges and Schools.

See roster and accompanying information in Attachment C.

G. Also describe faculty training to develop and deliver distance courses.

Texas A&M ITS, a unit under the vice president for technology, is the hub for technology-related services pertaining to online programs in the university including the proposed distance program in transportation planning. ITS also provides professional development opportunities and administers e-learning resources. Faculty teaching online have participated in workshops on e-learning and use of Blackboard Vista, which is the university-wide platform for uploading syllabi, managing grades, and teaching courses in either a hybrid format or completely online. Its features include managing course content, grade books, assignments, chat rooms, bulletin boards, audio-video presentations, and assessments such as quizzes and examinations. The ITS will provide continuing training for certificate program faculty members to increase their expertise. In addition, more experienced faculty members involved in technology-mediated instruction are actively involved as peer mentors for less-experienced faculty members.

H. Address impact of the program on teaching loads.

The normal teaching load for a full-time faculty member in LAUP at TAMU is nine semester credit hours (i.e., three courses) per semester. Tenure-track faculty members with clear expectations for research and active participation in graduate committees and service typically teach two courses per semester. Three of the proposed certificate courses are currently taught by a non-tenure-track faculty member jointly appointed with the Texas Transportation Institute. Since only five courses will be taught online, we do not expect the teaching loads to be adversely affected by the proposed online Certificate in Transportation Planning.

I. Describe the evaluation plan to be used, addressing SACS criteria.

Transportation planning is a concentration area in the urban planning and allied disciplines such as civil and transportation engineering. Faculty members who teach the core transportation planning course are members of the department. These faculty members, like others, participate annually in faculty evaluations. Each member of the department completes an annual evaluation based on the mutually agreed upon goals for teaching, research, service, and engagement between the faculty and department head. In addition, tenure-track faculty members are reviewed in two phases, first by the department's Promotion and Tenure Committee and then the department head.

The head reviews the evaluation and discusses it with each faculty member. A signed copy is then forwarded to the dean of the College of Architecture for onward transmittal to the dean of faculty and provost in accordance with approved university policies and procedures. Student evaluations, pedagogical innovations, workshop participation (including technology-mediated instruction), innovative assessments linked to learning outcomes, and participation in the scholarship of teaching are some of the criteria used to evaluate faculty for teaching.

More specifically, student evaluations and assessments linked to learning outcomes will be conducted for each proposed online course, and these will be compared to similar courses offered on site.

Additionally, other factors are assessed when considering a program that is provided to students via distance education. The approval processes at the university level (Graduate Committee, Faculty Senate, as well as other pertinent committees) jointly review the program's proposal to ensure the following factors have been addressed:

- faculty readiness (faculty knowledge and skills; sufficient number of qualified faculty, including the market availability of future qualified faculty members in the discipline; sufficient university resources, including projected travel expenses if it is an off-campus program, computer resources and software, etc.);
- student support services (the availability of library resources and plans for accomplishing other learning experiences unique to the discipline, e.g., residency if it is a doctoral program, laboratory experiences, etc.); and
- alignment with the strategic plans of the College of Architecture and Texas A&M University.

Student learning outcomes for all academic programs in LAUP including those for the MUP program have been entered in the WEAVE, the university's data planning and assessment system. LAUP, in conjunction with the college, is responsible for ensuring comparable achievement of learner outcomes, student persistence and completion rates, graduate placement, and follow-ups. These criteria will be assessed annually and addressed in the department's plans and assessment reports. In instances where any part of an academic program is offered off campus, or using other distance education modalities (web-based instruction, interactive television, etc.), as will be the case with the proposed Certificate in Transportation Planning by distance, the department head, certificate coordinator, and/or faculty will develop assessment techniques that evaluate the comparability of student achievement and learning outcomes with on-campus course delivery annually and respond to any discrepancies in a timely manner, if they arise. Regardless of modality or location of instruction, the university is committed to comparing on-campus and off-campus student achievement for all programs.

Results of these various evaluation methods that assess learning outcomes will be reviewed by the certificate/program faculty and the department's Curriculum Committee/Coordinator Council. Weaknesses identified during the certificate assessment and review processes are triggers for program and/or course change. The College of Architecture and TAMU are committed to program assessment and continuous improvement for all degree and certificate programs.

J. Attach Cost Estimate Form that indicates additional costs associated with this request and sources of funds to meet the costs.

The Certificate of Transportation Planning has been offered at TAMU since 2008. The department head (Dr. Ndubisi) along with two faculty members that teach courses in transportation planning received two grants totaling \$120,000 in 2009 and 2010 from the Federal Department of Transportation via the Texas Transportation Institute University Transportation Center for Mobility™, to assess the capability of delivering the certificate by distance and to convert four certificate courses for online delivery by April 2012. These are the key budgetary expenditures for implementing this distance program. As such, the department's current budget will cover program expenses including administration, faculty, clerical/staff, supplies, materials, and other costs associated with delivering the certificate by distance.

K. Describe the arrangement made to share educational resources through consortia with other institutions, if any.

N/A

L. Additional Information that would be useful in evaluating this request.

Attachment A

Graduate Certificate in Transportation Planning: Certificate Structure and Credit Hour Requirement

Prefix and Number	Required Courses	SCH	Campus FTF	Online*
PLAN 612	Transportation in City Planning	3	X	X
PLAN 673	Design for Sustainable Transportation	3	X	X
PLAN 674	Transportation Systems Analysis	3	X	X
PLAN 676	Transportation Investment Decisions	3	X	X
PLAN 691	Comprehensive Examination	3	X	X
	Total Required SCH	15		
Prefix and Number	Elective/Substitute Courses	SCH	Campus FTF	Online*
PLAN 670	Urban Public Transportation Planning	3	X	N/A
PLAN 678	Transportation Studio	3	X	N/A
	Total Required SCH	6		

*Under Development: Due April 30, 2012 (course development supported through a grant from the Federal Department of Transportation via TTI's University Transportation Center for Mobility™).

Attachment B

Certificate Structure and Credit Hour Requirement

The Transportation Certificate will involve a 15-credit sequence comprised of one required foundational course (three credits), three focus-area courses (nine credits), and a capstone course (three credits) providing a comprehensive overview and application of the skills and techniques learned during the completion of the certificate program. A comprehensive examination may be substituted for the capstone course. The proposed program differs in three minor ways from the existing certificate program. First, the prospective student does not necessarily need to be enrolled in a graduate degree at the university to be enrolled in the certificate since it is targeted to place-bound students. As such, students can enroll directly into the program, similar to the way the Bush School enrolls students into the online certificates it offers. Second, the certificate does not need to be awarded concurrent with a graduate degree. Third, the courses will be delivered as appropriate in a condensed and flexible format to increase access, as is also done in the Bush School.

Figure A1 (next page) depicts the overall structure of the 15-credit certificate program, comprised of the following components:

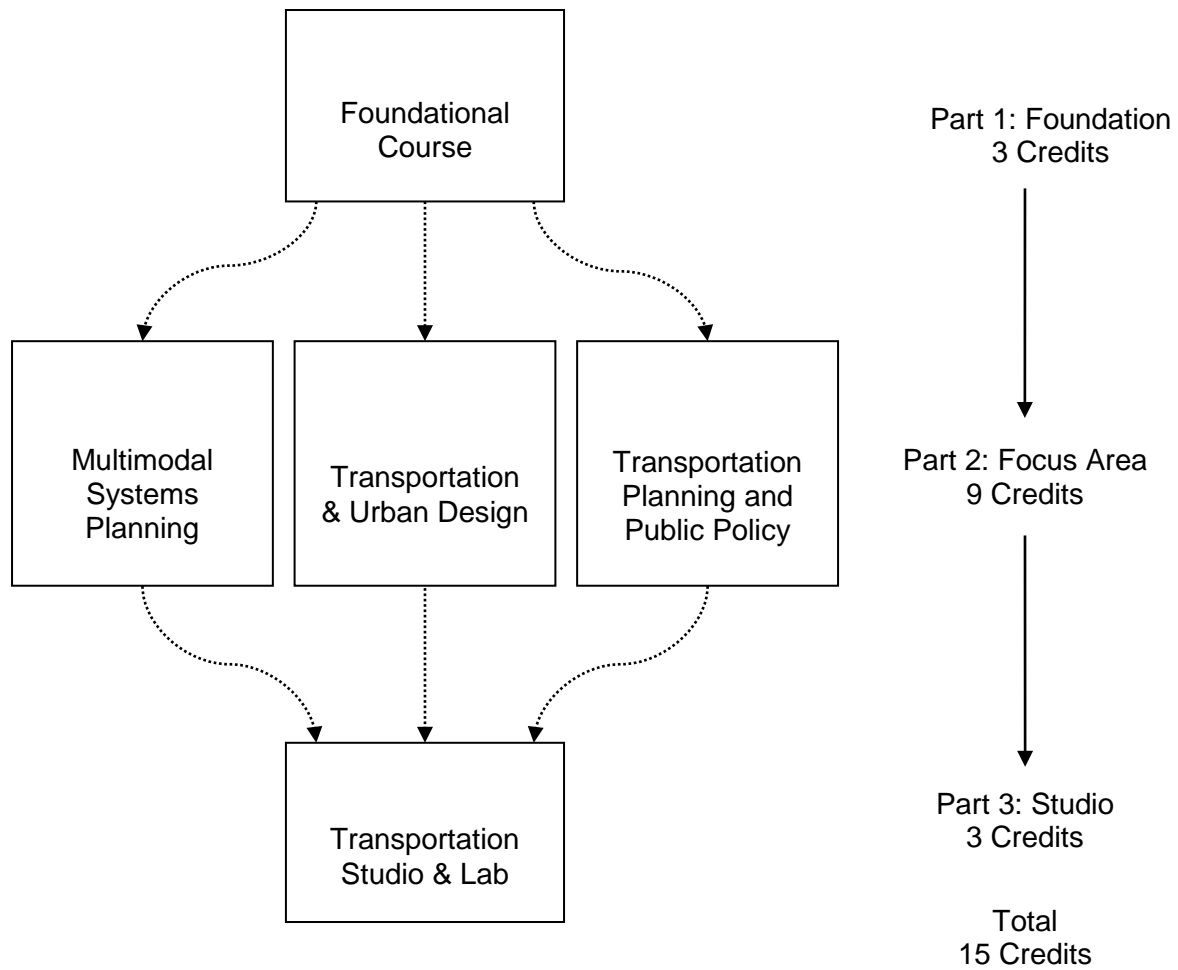


Figure A1: Certificate in Transportation Curriculum Structure.

Attachment C

Instructional Faculty

The following table depicts faculty members who teach core courses in the Graduate Certificate of Transportation Planning Program.

Name of Core Faculty and Faculty Rank	Highest Degree and Awarding Institution	Courses Assigned in Program	% Time Assigned to the Program*
Joh, Ken; Assistant Professor	Ph.D. in Planning, Policy, and Design from the University of California, Irvine	PLAN 604: Planning Methods I; PLAN 670: Public Transportation; PLAN 673: Design Sustainable Transportation	75%
Eisele, Bill; Visiting Associate Professor	Ph.D. in Civil Engineering from Texas A&M University	PLAN 678: Applied Transportation Studio	25%
Perkinson, Dennis; Lecturer	Ph.D. in Urban and Regional Science from Texas A&M University	PLAN 612: Transportation in City Planning	10%
Lomax, Tim; Lecturer	Ph.D. in Civil Engineering from Texas A&M University	PLAN 612: Transportation in City Planning	10%
Turnbull, Katherine; Lecturer	Ph.D. in Urban and Regional Science from Texas A&M University	PLAN 612: Transportation in City Planning	10%
Ellis, David; Visiting Associate Professor	Ph.D. in Urban and Regional Science from Texas A&M University	PLAN 676: Transportation Investment Decisions	25%

Note: 25% assignment is the equivalent of teaching one course.

The following table depicts faculty members who teach supportive electives in the Certificate of Transportation Planning Program as well as transportation concentration courses in the MUP and Ph.D. programs.

Name of Core Faculty and Faculty Rank	Highest Degree and Awarding Institution	Courses Assigned in Program	% Time Assigned to the Urban Planning Program
Van Zandt, Shannon; Assistant Professor	Ph.D. in Urban and Regional Planning from the University of North Carolina at Chapel Hill	PLAN 601: Introduction to Planning; PLAN 613: Planning Methods and Techniques; PLAN 656: Housing and Community; PLAN 661: Communications; PLAN 684: Professional Internship	100%
Wunneburger, Doug; Senior Lecturer	Ph.D. in Forestry from Texas A&M University	PLAN 625: GIS in Landscape and Urban Planning; PLAN 626: Advanced GIS in Landscape Architecture and Urban Planning; URSC 325: Introduction to GIS; URSC 326: Advanced GIS Urban and Regional Study	100%
Lindell, Michael; Professor	Ph.D. in Psychology from the University of Colorado, Boulder	PLAN 649: Organized Disaster Response; PLAN 650: Disaster Response Planning; URSC 310: Urban Analytic Methods	100%
Peacock, Walt; Professor and HRRC Director	Ph.D. in Sociology from the University of Georgia	URSC 641: Analytic Methods; URSC 642: Analytic Methods	100%
Brody, Sam; Professor	Ph.D. in City and Regional Planning from the University of North Carolina at Chapel Hill	PLAN 641: Environmental Planning Administration	25%
Ndubisi, Forster; Professor and LAUP Department Head	Ph.D. in Regional Planning and Resource Development from the University of Waterloo, Canada	LAND 200: Introduction to Landscape Architecture Practice; LAND 689: Ecological Planning; URSC 301: Introduction to Planning; URSC 485: Directed Studies	25%

APPENDIX B—SAMPLE CHECKLIST AND DETAILED WEEKLY SCHEDULE FOR ONLINE COURSE DELIVERY

Checklist

1. Weekly Announcement
2. Topic
3. Learning Outcomes
4. Knowledge and Skills Acquisition
 - Lectures
 - Required Readings
 - Additional Readings
 - Other Resources
 - Web Postings
5. Assessment
 - Submitted Assignments
 - Discussion Forum
 - Quiz
 - Paper
 - Peer evaluations
 - Group projects
 - Others
6. Weekly Overview

Detailed Weekly Schedule

1. Weekly Announcement Page

Provide an overview of the week's activities and guidance, as well as a description of expectations of the student for the week. This message will appear on the opening page of Week 1 for all students to see.

Example: Our first topic addresses the nature of nonprofit management and how nonprofit organizations are distinctive organizations in our society that fulfill unique purposes. You are expected to review the lectures, read the assigned readings at a minimum, participate in the forum discussions in a timely manner, and complete the quiz.

2. Topic

Example: Introduction and Context of Nonprofit Management

3. Learning Outcomes

Example:

- Define the sectors of society including the unique attributes of the nonprofit sector.
- Explain how business and government sectors impact nonprofits.

- Identify the values that guide nonprofit management.

All learning outcomes must be measured by an assessment (discussion posting, written paper, quiz, etc.)

4. Knowledge and Skills Acquisition (specify delivery format)

Students are expected to participate and should complete the following as required:

- Taped Lectures: (e.g., two pre-taped 45-minute lectures using Camtasia; taped videos, audio, audio-video, others):
 - Introduction to Course.
 - Context of Nonprofit Management.
- Web Conferencing (using Centra): All students must log in and participate in web conferencing every other week on Thursdays from 2:10–3:00 p.m., including Week 1. Students will be provided with specific instructions on how to log in and participate.
- Required Readings

Example:

Title: The Josssey-Bass Handbook of Non Profit Management, Chapter One
 Author: Robert D. Herman and Associates (eds.)
 Edition: 2nd Edition, 2005
 Publisher: Jossey-Bass
 ISBN: 0-7879-6995-8

- Other Required Materials
- Additional Resources (e.g., Web Postings)

Example:

- Kennedy School cases are required. They can be purchased online at <http://www.ksgcase.harvard.edu>.
- IRS: <http://www.irs.gov/>. Follow the link for charities and nonprofits.
- Guidestar: <http://www.guidestar.org/>. Provides web database of all IRS-registered charitable nonprofits. See article on reading Form 990.
- National Center for Charitable Statistics at the Urban Institute: <http://ncsc.urban.org/>. Provides information on financial reporting formats for nonprofit organizations.

5. Assessment

- Submitted Assignments: Provide specific assignment instruction—specifics of assignment, due date, how to submit (discussion, assignment tool, etc.).

Example:

Values in Organization Activity Part I (individual rankings due by Day 3):

- Assign students to groups before activity.
- Create specific discussion threads for each group on discussion board.
- Have students complete the Individual Ranking Values in Organization.
- Have students post individual answers to group's discussion thread and then discuss with their groups.

Values in Organization Activity Part 2 (group ranking) due by Day 5:

- Have students work in groups to reach consensus for Values in Organization Part 2.
- Have each group identify top three or four values and develop reasoning for their ranking.
- Have one student from each group post the group's final decision to the main course discussion thread along with the rationale for their ranking.

- b. Discussion Forum: Students are expected to participate in discussion forums each week. The instructor may pose the initial questions and invite students to provide additional questions, thereby creating a question bank. The instructor then selects the final discussion questions for each week. For Week 1, each student is usually expected to post his or her biographical sketch. Instructors are required to post their biographical sketch prior to the class and to respond to each student's post.

Example:

Participate in the following discussion forums:

- Due by Day 1: Post your introduction on the discussion forum titled "Week 1 Discussion Question 1."
 - Week 1 Discussion Question 2, initial posting due by Day 3. Respond to at least two of your fellow students' postings by Day 5.
 - Week 1 Discussion Question 3, initial posting due by Day 5. Respond to at least two of your fellow students' postings by Day 7.
- c. Quiz: Students are expected to take a quiz every two weeks beginning the second week. More specifically, quizzes will be on Week 2 (Jan. 23-28), Week 4 (Feb. 7-12), Week 6 (21-26), etc. Each quiz will consist of 50 multiple-choice questions covering the course objectives for each two-week period. Students will be given 120 minutes to complete each quiz. Students will not be able to assess the following week's lectures if they do not pass the quiz.
- d. Paper: None in Week 1. Note that the two papers required in this course are due in Week 7 and Week 14 respectively. Students will be given more specific information about the nature and expectations for the papers.
- e. Peer Evaluations (none in Week 1)
- f. Group Projects (none in Week 1)
- g. Others

6. Week 1 Overview

Example:

Assignment	Due Date	Format	Point Value	Location
Post Your Introduction	Day 1	Discussion Forum		Weekly Discussions
Week 1 Discussion Question 2	Day 3 (1 st post)	Discussion Forum		Weekly Discussions
Week 1 Discussion Question 3	Day 5 (1 st post)	Discussion Forum		Weekly Discussions
	Day 7	Assignment to Instructor		Assignment Tool

APPENDIX C—COURSE MATERIALS FOR ONLINE TRANSPORTATION PLANNING COURSES

The course materials for the first three weeks of classes for each of the four newly developed online courses can be accessed at http://tti.tamu.edu/documents/utcm/Ndubisi_11-13-72.zip. Full course materials will be uploaded into the virtual learning platform when a course is scheduled for delivery.

Course materials are included for the following courses:

- PLAN 672 (Transportation and Environment).
- PLAN 673 (Sustainable Transportation).
- PLAN 674 (Transportation Systems).
- PLAN 676 (Transportation Investment Decisions).



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