Graduate School
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Minutes of the Graduate Council
March 3, 2009
As approved by the Graduate Council, April 7, 2009

Members present: K. Adhikari, S. Brown, R. Collins, B. DePaola, M. Donnelly, T. Easton, K. Getty, S. Garimella, D. Goodin, C. Griffin, D. Gruenbacher, S. Haar, M. Hossain, J. Katz, J. Keller, V. Krstic, C. Moore, B. Rowland, R. Schaeffer, G. Shroyer, J. Steichen, F. White, M. Zolkiewski

Members absent: S. Bossmann, F. Burrack, K. Dillard, J. Faubion, J. Fliter, L. Hoag, M. Kaff, M. Linville, J. Reese, B. Schultz, K. Taylor

Graduate School staff present: S. Fox, J. Guikema, S. Schlender, C. Shanklin

Guests: D. Donelin, K. Myers-Bowman, B. Meredith, B. Stokes, F. Webb, D. Youngman

1) Opening remarks
Carol Shanklin announced that Elizabeth Dodd will present at the Distinguished Graduate Faculty Lectures Series on Tuesday, April 7, 2009 at 4:00 pm in the Big 12 room of the K-State Union. Faculty and council members are encouraged to attend.

2) Minutes of the February 3, 2009 were approved as presented.

3) Graduate School Actions and Announcements Appointments for Graduate Faculty Membership

Name	Position	Department/Program	Date approved by Graduate School
Katie Kingery-Page	Assistant Professor	Landscape Architecture/ Regional & Community Planning	2/4/09
Patricia Thompson	Assistant Professor	Music	2/4/09

Non-Graduate Faculty to teach Graduate Courses *(Emergency Approval)*

Name	Position	Department/Program	Date approved by Graduate School
Bruce McMillan	Instructor	Architecture	2/2/09
Robert Morgan	Instructor	Architecture	2/2/09

4) Academic Affair Committee – Todd Easton, Chair
On behalf of the Academic Affairs Committee, Todd Easton, chair, proposed to approve the following faculty members for graduate faculty membership only and graduate faculty associate. The motion passed.

Membership	Position	Department/Program
Blake Belanger	Assistant Professor	Landscape Architecture/Regional & Community Planning
Abby Franchitti	Instructor, ELP	Modern Languages

Graduate Faculty Associate

Jason Brody	Assistant Professor	Landscape Architecture/Regional & Community Planning
Leena Chakrabarti	Assistant Director, ELP	Modern Languages
Beverly Earles	Associate Director, ELP	Modern Languages
Mitch Ricketts	Safety Coordinator	Communications
Jenell Williams	Instructor, ELP	Modern Languages
Mary Wood	Director, ELP	Modern Languages

Course and curriculum issues: On behalf of the Academic Affairs Committee, Todd Easton, chair, proposed to approve the following course and curriculum changes, drops and additions. The motion passed.

Expedited Course Changes:

Current Course Description	Proposed Course Description
ID 600. Interior Design Study Tour. (~~1~~ 3) ~~Intersession. A study tour to acquaint the student of the rich artistic and cultural locations in London, and other examples of architecture and town planning such as Georgian Bath. Lectures and tours target important design and furniture collections. England's varied examples of religious buildings compete for attention in this great center of art and architecture. Pr.: HIST 101 or 102, or ART 195 or 196.~~	**ID 600. Interior Design Study Tour.** (3) I, II, S. Supervised off-campus tour to acquaint the student with rich artistic and cultural locations around the world and expand student's global perspectives of the design profession. Lectures and tours target important interior/architectural design and furniture collections. Pr.: Instructor's permission.

Expedited Curriculum Changes:

PhD in Human Ecology - Specialization in Family Life Education and Consultation

CHANGE FROM:	**CHANGE TO:**
The PhD program in ~~Family Life Education and Consultation prepares students to develop and implement education programs designed to enrich and enhance individual and family well being.~~	The PhD program in Family Studies provides students with a foundation of knowledge and skills in interdisciplinary social science related to family. Students may specialize in the area of Family Life Education (focusing on the development and implementation of educational programs designed to enrich and enhance individual and family well being), Personal Financial Planning (focusing on resource management within families) and develop advanced research skills to investigate family phenomena.
A minimum of 91 credits is required. No more than 30 credit hours from a master's degree may be applied.	A minimum of 91 credits is required. No more than 30 credit hours from a master's degree may be applied.
Required Courses: FSHS 850 Family Studies FSHS 852 Contemporary Family Theories FSHS 871 ~~Family Life Educ and Consult~~ ~~FSHS 875 Delivery of Human Services~~ ~~FSHS 881 Pract in Family & Comm Serv~~ ~~OR~~ ~~FSHS 882 Pract in Study of Student Dev~~ ~~FSHS 893 Program Evaluation~~ ~~FSHS 908 Topics in FLEC~~ FSHS 950 Adv Family Theory FSHS 979 ~~Advanced FLEC~~ FSHS 981 Adv Practicum in Family & Comm Serv	**Required Courses:** FSHS 800 Orientation to FSHS Prof FSHS 825 Family Resource Management FSHS 850 Family Studies FSHS 852 Contemporary Family Theories FSHS 871 FLE Foundations and Methods FSHS 950 Adv Family Theory FSHS 979 Adv Professional Issues in FSHS FSHS 981 Adv Practicum in Family & Comm Serv
Electives: ~~6~~ credits of electives in FSHS	**Electives:** 12 credits of electives in FSHS
Statistics: 6 credits (use one of the sequences below) 1. ~~STAT 702 Statistical Methods for Social Sciences~~ ~~or~~ ~~STAT 703 Statistical Methods for Natural Sciences~~ ~~and~~ ~~STAT 704 Analysis of Variance and Covariance~~ ~~STAT 705 Regression and Correlation Analyses~~ 2. ~~STAT 702 Statistical Methods for Social Sciences~~ ~~or~~ ~~STAT 703 Statistical Methods for Natural Sciences~~	**Statistics: 6 credits (use one of the sequences below)** 1. FSHS 806 Statistical Methods in FSHS I and FSHS 906 Statistical Methods in FSHS II 2. EDCEP 817 Statistical Methods in Education and EDCEP 917 Experimental Design

~~and~~ ~~STAT 707 Applied Linear Statistical Methods~~ 3. ~~PSYCH 802 Quantitative Methods in Psychology~~ ~~PSYCH 805 Experimental Design in Psychology~~ 4. ~~SOCIO 825 Advanced Quantitative Methods~~ ~~SOCIO 925 Advanced Quantitative Methods II~~ 5. EDCEP 817 Statistical Methods in Education EDCEP 917 Experimental Design **Research Methods: ~~9~~ credits** FSHS 888 Research Methods in FSHS I FSHS 890 Methods in FSHS II ~~A research methods course of choice (800 level or above)~~ FSHS 990 Ph.D. Dissertation Proposal Seminar FSHS 999 Dissertation Research **OTHER SUPPORTING COURSES** (minimum of 9 credit hours)	**Research Methods: <u>12</u> credits** FSHS 888 Research Methods in FSHS I FSHS 890 Research Methods in FSHS II FSHS 902 Qualitative Research Methods in FSHS FSHS 907 Advanced Research Methods in FSHS FSHS 990 Ph.D. Dissertation Proposal Seminar FSHS 999 Dissertation Research **OTHER SUPPORTING COURSES** (minimum 9 credit hours)

PhD in Human Ecology - Specialization in Marriage and Family Therapy

CHANGE FROM:	CHANGE TO:
Marriage and Family Therapy (Ph.D.)	**Marriage and Family Therapy (Ph.D.)**
Program Requirements	**Program Requirements**
This curriculum for the Ph.D. in MFT follows COAMFTE guidelines. It assumes students have completed the requirements for the COAMFTE Master's-Level Standard Curriculum. Where that is not the case, students must complete the equivalent of any deficiencies. Most students complete the program in four years. Students have seven years to complete the program.	This curriculum for the Ph.D. in MFT follows COAMFTE guidelines. It assumes students have completed the requirements for the COAMFTE Master's-Level Standard Curriculum. Where that is not the case, students must complete the equivalent of any deficiencies. A minimum of 90 credits is required. No more than 30 credit hours from a masters degree may be applied to fulfill PhD requirements.
A. Theoretical Foundations of Marital and Family Therapy (3 hours)	**A. Theoretical Foundations of Marital and Family Therapy (3 hours)**
FSHS 987 (3) Advanced Clinical Theory	FSHS 987. (3) Advanced Clinical Theory.
B. Assessment and Treatment in Marital and Family Therapy ~~(6 hours)~~	**B. Assessment and Treatment in Marital and Family Therapy (3 hours)**
~~FSHS 866 (3) Sex Therapy~~ FSHS 970 (3) Clinical Specialization in MFT	FSHS 970 (3) Clinical Specialization in MFT
C. Family Studies and Human Services ~~(9-18 hours)~~	**C. Family Studies and Human Services (3 hours)**
~~FSHS 810 (3) Child Development~~ ~~FSHS 822.(3) Transition to Adulthood~~ ~~FSHS 845.(3) Adult Development and Aging~~ ~~FSHS 865 (3) Human Sexuality~~ FSHS 950 (3) Advanced Family Theory	FSHS 950 (3) Advanced Family Theory
D. Supervision of MFT ~~(12 hours)~~	**D. Supervision of MFT (9 hours)**
FSHS 984 (3) Supervision of Marriage and Family Therapy FSHS 986 (1-3) Practicum in Supervision of Marriage and Family Therapy	FSHS 984 (3) Supervision of Marriage and Family Therapy FSHS 986 (1-3) Practicum in Supervision of Marriage and Family Therapy
E. Research Methodology ~~(43-44 hours)~~	**E. Research Methods (49 hours)**
	FSHS 892 (3) Practicum in Human Development Research FSHS 902 (3) Qualitative Research Methods in FSHS
FSHS 983 (3) Marriage and Family Therapy Research FSHS 990 (1) Dissertation Proposal Seminar	FSHS 983 (3) Marriage and Family Therapy Research FSHS 990 (1) Dissertation Proposal Seminar

FSHS 999 (Var.) Ph.D. Research in Family Studies and Human Services At least 3 additional credit hours in research design /methods/ skills beyond FSHS 888 or its equivalent. One of the following: PSYCH 802 (3) Qualitative Methods in Psychology AND PSYCH 805 (3) Experimental Design in Psychology ~~OR~~ ~~SOCIO 825 (3) Quantitative Methods~~ ~~AND~~ ~~SOCIO 925(3) Specialized Approaches to Sociological Research~~ OR STAT 702 (3) Statistical Methods for Social Sciences OR STAT 703 (3) Statistical Methods for Natural Scientists AND BOTH STAT 704 (2) Analysis of Variance STAT 705 (2) Regression and Correlation Analyses OR EDCEP 817 (3) Statistical Methods in Education AND EDCEP 917 (3) Experimental Design in Educational Research	FSHS 999 (Var.) Ph.D. Research in Family Studies and Human Services At least 3 additional credit hours in research design /methods/skills beyond FSHS 888 or its equivalent. One of the following: PSYCH 802 (3) Qualitative Methods in Psychology AND PSYCH 805 (3) Experimental Design in Psychology OR <u>FSHS 806: Statistical Methods in FSHS I (3) I</u> AND <u>FSHS 906: Statistical Methods in FSHS II (3) II</u> OR STAT 702 (3) Statistical Methods for Social Sciences OR STAT 703 (3) Statistical Methods for Natural Scientists AND BOTH STAT 704 (2) Analysis of Variance STAT 705 (2) Regression and Correlation Analyses OR EDCEP 817 (3) Statistical Methods in Education AND EDCEP 917 (3) Experimental Design in Educational Research
F. Supervised Clinical Practice (9 consecutive hours) FSHS 985 (1-3) Ph.D. Practicum in Marriage and Family	**F. Supervised Clinical Practice (9 consecutive hours)** FSHS 985 (1-3) Ph.D. Practicum in Marriage and Family
G. Additional Learning ~~(as needed to reach 14 SDUs in Areas VII through XII)~~	**G. Additional learning (3 hours)** <u>One clinical or research elective - 3 credit hours\</u>
H. End-of-Program Requirements Complete written preliminary examinations and, if necessary, successfully defend them in the oral preliminary examination Complete a nine-month clinical internship Give your dissertation proposal seminar, write the dissertation, and successfully complete your oral defense of the dissertation ~~Either at KSU or elsewhere, students must have completed coursework in human sexuality and training in sex therapy.~~	**H. End-of-Program Requirements** Complete written preliminary examinations and, if necessary, successfully defend them in the oral preliminary examination Complete a nine-month clinical internship Give your dissertation proposal seminar, write the dissertation, and successfully complete your oral defense of the dissertation <u>Teaching Practicum</u> • <u>Serve as a GTA OR</u> • <u>Teach an intersession course OR</u>

~~Either at KSU or elsewhere, students must have completed coursework covering the entire lifespan.~~	• Enroll and complete Principles of College Teaching OR • Another activity approved by the Major Professor Professional Development • Present a poster / paper at a state, national or international conference OR • Develop and present a workshop OR • Get involved in KAMFT politics OR • Another activity approved by the Major Professor
Each doctoral student is expected to participate in the provision of supervision. Students take FSHS 984 in either their first or second fall semester. In their second year, they complete two FSHS 986 practica during the fall and spring semesters. Typically this involves supervising a master's student. Opportunities also exist to lead a master's practicum group and/or provide live supervision one evening per week at the KSU Family Center. Doctoral students begin to provide supervision once they, and the clinical faculty, feel they are ready. Supervision candidates are supervised by faculty members who are AAMFT Approved Supervisors. Under certain circumstances, it may be possible to arrange for more extensive supervision experiences.	Each doctoral student is expected to participate in the provision of supervision. Students take FSHS 984 in either their first or second fall semester. In their second year, they complete two FSHS 986 practica during the fall and spring semesters. Typically this involves supervising a master's student. Opportunities also exist to lead a master's practicum group and/or provide live supervision one evening per week at the KSU Family Center. Doctoral students begin to provide supervision once they, and the clinical faculty, feel they are ready. Supervision candidates are supervised by faculty members who are AAMFT Approved Supervisors. Under certain circumstances, it may be possible to arrange for more extensive supervision experiences.

Non-Expedited New Courses:

FSHS 660. Marriage Preparation and Enrichment. (3) II. History, processes, components, goals, and research support base for contemporary marriage preparation and enrichment programs. Pr.: FSHS 350. Recommended Pr.: FSHS 550.

FSHS 800. Introduction to Family Studies and Human Services Graduate Program. (0) I. Orientation for graduate students in FSHS. Assists with acclimating students to FSHS graduate study, emphasizing the importance of setting professional goals, identifying and utilizing resources for successful completion of graduate degree.

FSHS 806. Statistical Methods in Family Studies and Human Services I. (3) I. Introductory course in the use of statistics in family and human services research. Examines the use of statistical methods from basic descriptive and univariate measures to multivariate measures including ANOVA and Multiple Regression Analyses as they are used in family and human services research. Emphasis is placed on the analytical and applied aspects of the statistical procedures.

FSHS 825. Family Resource Management. (3) II, S. Survey of current personal finance and family resource management literature to provide an overview of current consumer finance research from multiple perspectives.

FSHS 902. Qualitative Research Methods in FSHS. (3) I. Expands students' skills in theories and methods associated with qualitative research. Emphasis on understanding foundations of qualitative methods, comparing and using various qualitative traditions and applying this knowledge to a research project. Pr.: FSHS 888 or equivalent.

FSHS 906. Statistical Methods in Family Studies and Human Services II. (3) II. Advanced applied statistics course designed for graduate students with a foundation and understanding of basic and multivariable statistics. Examines multiple variable analyses including log-linear, discriminate analyses, OLS and logistic regression and the issues involved using these techniques; principal component and factor analyses; path analyses; structural equation modeling; hierarchical linear and nonlinear modeling; and growth curve modeling. Pr.: FSHS 806 or equivalent.

FSHS 907. Advanced Family Research Methods. (3) I. A critical review and analysis of contemporary analysis techniques in family research, dealing with multiple members of family-like groups, including a variety of mixed model methodologies. Pr.: FSHS 806, 888, 890, 906 or equivalent graduate level research or statistics courses.

POLSC 985. Readings in Security Studies (1-6) I, II, S. Directed reading and discussion of a selected topic in international security.

POLSC 999. PhD Research in Security Studies (1-15) I, II, S. PhD research culminating in completed PhD dissertation.

Non-Expedited Curriculum Change:

Changes to the Technical Writing and Professional Communication Graduate Certificate Program

Offered through the English department, the graduate certificate in technical writing and professional communication recognizes the complexities and demands of written, oral, and digital communication in the workplace as well as the interdisciplinary character of writing and communication studies in the academy. Thus, while centered on writing, the certificate includes course options in rhetoric, communication, design, digital media, speech, and group dynamics.

The certificate is available to any student with an undergraduate degree. A current undergraduate may take course toward the graduate certificate if they enroll and pay for graduate credit. Classes for the certificate do not count toward their undergraduate degree. In some cases, courses may count toward a graduate degree. Interested students should meet with the program contact for advising and planning a course of study before taking any courses.

The certificate requires four courses (12 credit hours): one in writing, one in rhetorical or communication theory, and two electives.

At least one course must be from outside the student's home discipline. Because of the wide variety of electives available, students can craft much of the certificate to meet their own career and educational goals. As with graduate degrees, participants are required to map out a coherent Program of Study with the certificate coordinator. The structure of the certificate is flexible enough so that most students, with advance planning, can pursue it without impeding regular degree progress.

Certificate Requirements: This certificate requires four courses (12) from among the categories below:	Certificate Requirements: This certificate requires four courses (12) from among the categories below. <u>At least one course must be from outside the student's home discipline.</u> <u>Faculty or students may petition the Program Director for permission to use as an elective a course that is related to technical writing and professional communication but not listed below.</u>

Writing Students choose one from the following: AGCOM 810 - Science Communication ENGL 510 - Introduction to Professional Writing ENGL 759 - Studies in Technical Communication **Rhetorical or Communication Theory** Students choose one from the following: ~~COMM 525 - Argumentation Theory~~ COMM 726 - Seminar in Persuasion COMM 733 - Rhetorical Criticism ENGL 755 - Studies in Composition and Rhetoric MC 765 - Communication Theory **Related Electives** Students choose two from the following: ART 575 - Graphic Design and Illustration ~~ART 576 - Advanced Typography~~ ART 820 - Graduate Graphic Design/Visual Comm COMM 526 - Persuasion ~~COMM 716 - Small Group Communication~~ ~~COMM 735 - Leadership Communication~~ ~~ENGL 604 - Expository Writing Workshop~~ ENGL 799 - Problems in English MANGT 520 - Organizational Behavior ~~MANGT 820 - Behavioral Management Theory~~ MC 575 - Advanced Multimedia Techniques ~~MC 640 - Advertising Campaigns~~ ~~MC 645 - Public Relations Campaigns~~ ~~SPCH 745 - Political & Corporate Speechwriting~~	**Writing** Students choose one from the following: AGCOM 810 - Science Communication ENGL 510 - Introduction to Professional Writing ENGL 759 - Studies in Technical Communication **Rhetorical or Communication Theory** Students choose one from the following: COMM 726 - Seminar in Persuasion COMM 733 - Rhetorical Criticism ENGL 755 - Studies in Composition and Rhetoric MC 765 - Communication Theory **Related Electives** Students choose two from the following: <u>AGCOM 712 - Environmental Communication</u> ART 575 - Graphic Design and Illustration ART 820 - Graduate Graphic Design/Visual Comm COMM 526 - Persuasion <u>COMM 730 - Classical Rhetorical Theory</u> <u>COMM 734 - Rhetoric of Social Movements</u> <u>EDACE 786 - Topics/Grant Writing</u> <u>ENGL 665 - Creative Non-Fiction</u> <u>ENGL 685 - Topics in Rhetoric and Composition</u> <u>ENGL 765 - Advanced Creative Non-Fiction</u> <u>ENGL 797 - Internship in Professional Writing</u> ENGL 799 - Problems in English MANGT 520 - Organizational Behavior MC 575 - Multimedia Techniques

Non-Expedited Curriculum Change:

PROPOSED GRADUATE CERTIFICATE PROGRAM IN TRANSPORTATION ENGINEERING
(for consideration by the Graduate Council)

The provision of a safe, efficient and environmentally sound transportation system is critical to the physical, environmental and economic health of the nation. A pool of highly qualified transportation professionals is required to plan, design, operate and maintain our nation's transportation infrastructure, facilities and services. There is a need for educational programs designed for transportation professionals who want to expand their knowledge and skills through a program of graduate study that is less extensive, and different from, a traditional master's program. The transportation engineering certificate program described in this proposal will provide transportation professionals with the opportunity to pursue a focused collection of courses that, when completed, allows the student to receive recognition of their continued effort in the area of transportation engineering, or to cumulate credit hours toward their master's degree.

Educational objectives of the certificate program

1. Prepare graduates for careers in transportation engineering.
2. Expand the pool of qualified transportation engineering professionals with post-baccalaureate education.

List of the courses associated with the certificate

The Graduate Certificate in Transportation Engineering requires the completion of 12 credit hours of course work as described below.

Core Courses

All students must complete two of the following Core Courses (6 credit hours):

CE 774 - Pavement Design

Methods of evaluating the load-carrying capacity of soil subgrade, subbase, and base courses; critical analysis of the methods of design for flexible and rigid pavements; methods of increasing the load-carrying capacity of highway and airport pavements. Two hours rec. and three hours lab a week. Pr.: CE 522. When offered: I (on sufficient demand). Credits: (3)

CE 775 - Traffic Engineering

Traffic operations of roads, streets, and highways; traffic engineering studies; use of signs, signals, and pavement markings as traffic control devices; highway and intersection capacity, design and operations of traffic signals; current microcomputer models and applications. Pr.: CE 572. When offered: I. Credits: (3)

CE 786 - Land Development for Civil Engineers and Planners

Engineering problems involved in site planning and design. The comprehensive planning process, zoning and subdivision regulations; design and location of streets and highways, water supply and sanitary facilities, drainage and public utilities. Two hours rec. and three hours lab a week. Pr.: CE 572 or consent of instructor. When offered: I. Credits: (3)

Elective Courses

In addition to the Core Courses, students must complete a minimum of 6 additional credit hours of electives from the remaining core course and the following approved list of courses.

CE 680 - Economics of Design and Construction

Selection of alternative engineering design and construction solutions through study of unit cost determination, cost estimating, and financing procedures. Introduction to construction scheduling. Three hours rec. a week. Pr.: Senior standing in engineering or graduate standing for non-engineering majors. When offered: II. Credits: (3)

CE 741 - Civil Engineering Materials II

Advanced study of civil engineering materials including concrete, steel and bituminous concrete. Two hours rec. and three hours lab a week. Pr.: CE 641 or CHE 350. When offered: II. Credits: (3).

CE 771 - Travel Demand Modeling

Historical development and current status of techniques used in urban transportation planning and travel demand forecasting; trip generation, trip distribution, mode choice, and traffic assignment. Two hours rec. and three hours lab a week. Pr.: CE 572 or consent of instructor. When offered: II. Credits: (3)

CE 776 - Pavement Performance and Management Systems

Pavement management systems including pavement condition and structural evaluation, analysis, and optimization. Economics analysis and rehabilitation planning including computer applications. Three hours rec. a week. Pr.: CE 572. When offered: I, in alternate years. Credits: (3)

CE 777 - Portland Cement Concrete Pavements

Portland cement concrete mix design and production. Paving operations. Saw and seal operations. Subgrade preparation. Base selection. Drainage selection, design and construction. Bonded and unbonded concrete overlays. Whitetopping and Ultra-Thin Whitetopping. Concrete pavement restoration; Quality Assurance and Quality Control in

Concrete Pavement Construction. Three hous rec. a week. Pr.: CE 641. When Offered II. Credits: (3)

CE 816 - Selected Topics in Civil Engineering

Study of intermediate level topics of interest in civil engineering. Topics announced when offered. Pr.: Graduate standing and approval of instructor. When offered: I, II, S, on sufficient demand. Credits: (Var.). *[Note: Only "selected topics" with a transportation focus can be applied to the Graduate Certificate Program in Transportation Engineering.]*

CE 872 - Transportation Safety

Importance of transportation safety, crash data collection, common crash databases, traffic safety studies, accident data analysis, identification of high crash locations, traffic control devices as related to safety, special population group safety, traffic conflict studies, accident reconstruction, statistical methods in crash data analysis and traffic calming. Three hrs. rec. per week. Pr: CE 572 or consent from the instructor. When offered: II, in alternate years. Credits: (3)

CE 875 - Traffic Flow Theory

Theory of traffic flow, traffic stream characteristics, car following models, shock wave analysis, queuing analysis, application of statistical methods to traffic engineering problems, traffic simulation. Two hours rec. and three hours lab a week. Pr.: CE 775. Pr. or conc.: STAT 510. When offered: II. Credits: (3)

Other Graduate level course work (maximum of 3 credit hours) in Engineering Management or Statistics as approved by the Program Coordinator.

Other Requirements

In addition to the course work requirements described above, students are further required to demonstrate advanced knowledge and competency in the area of transportation engineering by completing one of the following:

1) A research paper prepared as part of the requirements of one of the Core or Elective Courses described above. To satisfy this requirement, the research paper must have received a minimum letter grade of "B."

2) Presentation of the results of a transportation engineering related study or project to the faculty of the Transportation Engineering Certificate Program. To satisfy this requirement, the study or project must have been completed under the supervision of the candidate for the Graduate Certificate in Transportation Engineering.

The required evidence of advanced knowledge and competency should be presented to the Program Coordinator prior to the beginning of the candidate's final semester of course work.

How the courses associated with the certificate will meet educational objectives

The courses associated with the proposed certificate program allow students to design a program of study in general transportation engineering, or to specialize in a particular area of transportation engineering such as traffic engineering, transportation materials engineering, highway safety, traffic operations, transportation planning, and site planning. In either case, the certificate program provides the means to increase the pool of qualified transportation engineers and prepare graduates to pursue careers in transportation engineering. The core classes have been chosen to ensure that they are offered on a regular basis and also, the contents would prepare the foundation for a general transportation engineering professional yet with the flexibility to specialize further. Each of these classes requires solving advanced transportation engineering problems using mathematical, scientific, computational and analytical skills. Ability to critically synthesize and evaluate information related to transportation engineering problems is a must in order to be successful in these classes. All classes also require preparation of a term project report.

Need for the proposed certificate

The provision of a safe, efficient and environmentally sound transportation system is critical to the physical, environmental and economic health of the nation. A pool of highly qualified transportation professionals is required to plan, design, operate and maintain our nation's transportation infrastructure, facilities and services.

However it is generally accepted within the profession that U.S. universities are not producing sufficient numbers of engineers to meet the nation's needs. In addition, several professional engineering societies have suggested that the traditional four-year engineering curriculum is not sufficient to prepare engineers for professional practice in a technologically advanced, global market. The need for highly qualified transportation engineers is particularly acute. The ex-Administrator of Federal Highway Administration (FHWA), Mary Peters had noted that:

"*I am becoming increasingly concerned about a significant shortage of qualified and experienced transportation professionals. Some estimates put the workforce shortage at 40-50% as transportation workers begin to retire in the next 5-15 years. In fact, forty percent of our current state and local workforce today is between the ages of 45-65. New and innovative programs must be considered that will increase the number of students with an interest in transportation and better prepare them to enter the transportation workforce*."
http://www.fhwa.dot.gov/pressroom/re020112.htm

According to the Occupational Outlook Handbook, 2008-09 Edition, of the Bureau of Labor Statistics**,** civil engineers held 256,000 out of about 1.5 million engineering jobs in 2006**.** Civil engineers are expected to experience **18** percent employment growth during the projections decade, faster than the average for all occupations. Spurred by general population growth and the related need to improve the Nation's infrastructure, more civil engineers will be needed to design and construct or expand transportation, water supply, and pollution control systems and buildings and building complexes. They also will be needed to repair or replace existing roads, bridges,

and other public structures. The economic stimulus bill being considered by the Congress also emphasizes the creation of jobs through transportation infrastructure upgrade.

There is a need for educational programs designed for current and future transportation professionals who want to expand their knowledge and skills through a program of graduate study that is less extensive, and different from, a traditional master's program.

The transportation engineering program at Kansas State University has been expanding steadily. Currently, this area has the highest number of graduate students on campus (19 out of total 33 or 58%) in the Civil Engineering Department. The program also has a number of off-campus graduate students. The table below shows the enrollment data for the last five years in the proposed core classes of the certificate program for both on- and off-campus students:

Class	S'04		F'04		S'05		F'05		S'06		F'06		S'07		F'07		S'08	
	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off
CE 774	4	2			4	3			2	9			5	2			5	6
CE 775			3	1			2	5			4	5			8	5		
CE 786			3	7			10	0			5	7			11	11		

The enrollment in some other elective classes during the same period is also shown below:

Class	S'04		F'04		S'05		F'05		S'06		F'06		S'07		F'07		S'08	
	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off
CE 680	26	0			28	6			28	2			16	4			32	11
CE 776			5	1			3	3							7	6		
CE 777			3	7			5	2			4							

The figures show that these classes have been showing a steady demand. Since it takes a long time for an off-campus graduate student to complete a degree by course work only, a 12-hour certificate will be a mile stone and help him/her in job advancement. This certificate program is primarily targeting the off-campus graduate student population (40+) in Civil Engineering. Approximately 25% of these students are in the Transportation Engineering area. The certificate program is also open to the on-campus students.

Description of the certificate program's administration including admission procedure

The admission requirements to the program are the same as the graduate degree program in Civil Engineering and the Graduate School. The Graduate Studies Committee in the Department of Civil Engineering will evaluate each applicant and forward the recommendations concerning acceptance to the Graduate School for final approval.

The Graduate Certificate Program in Transportation Engineering is coordinated by Dr. Robert W. Stokes, Professor of Civil Engineering http://www.ce.ksu.edu/ with administrative support for the distance education component of the program provided by the Division of Continuing Education http://www.dce.ksu.edu/courses/certificates/.

Estimated budget to support the certificate program

The distance education component of the proposed certificate program will be funded by student fees as described in the current agreement between the College of Engineering and the Division of Continuing Education. The Mid-America Transportation Center at the University of Nebraska, Lincoln has pledged financial assistance for this certificate program. For FY '09, $20,160 has been allocated to support this certificate program. We expect this support to continue.

Names of the faculty associated with the certificate program

Dr. Sunanda Dissanayake, P.E., Associate Professor of Civil Engineering.
Dr. Mustaque Hossain, P.E., Professor of Civil Engineering.
Dr. Kyle Riding, Assistant Professor of Civil Engineering.
Dr. Eugene R. Russell, P.E., Professor Emeritus of Civil Engineering.
Dr. Robert W. Stokes, Professor of Civil Engineering.

Name and address the coordinator of the program

Robert W. Stokes, PhD
Kansas State University
Dept. of Civil Engineering
2118 Fiedler Hall
Manhattan, KS 66506-5000
Office: 785-532-1595
Fax: 785-532-7717
drbobb@ksu.edu

Student learning outcomes and assessment plan for the program

Upon completion of this certificate program students will be able to demonstrate:

- Ability to solve advanced transportation engineering problems using mathematical, scientific, computational and analytical skills.
- Ability to critically synthesize and evaluate information related to transportation engineering problems.
- Ability to communicate effectively both in oral and written forms.

The proposed Certificate Program will be assessed as per the plan described in the Department of Civil Engineering *Graduate Certificate Program in Transportation Engineering Assessment of Student Learning Plan*.

Endorsements from those academic units impacted by the new graduate certificate

This proposal has been reviewed and approved by the Graduate Studies Committee, the faculty of the Department of Civil Engineering, and the College of Engineering.

Graduate Certificate Program in Transportation Engineering
Assessment of Student Learning Plan
Kansas State University

☐ Check the box if your program's student learning outcomes have been modified since November 2003. If so, please email the revised outcomes (apr@ksu.edu) or attach a hard copy to this document.

A. College, Department, and Date of this Submission

College: Engineering
Department: Civil Engineering
Date of Submission: January 15, 2009

B. Contact Person(s) for the Assessment Plans

Robert W. Stokes, Transportation Certificate Program Coordinator
Yacoub Najjar, Interim Department Head
Hayder Rasheed, Graduate Program Coordinator

C. Program – degree, minor, or certification

Graduate Certificate in Transportation Engineering

D. Assessment of Student Learning Three-Year Plan

1. Student Learning Outcome(s)

Upon completion of this certificate program students will be able to demonstrate:

- Ability to solve advanced transportation engineering problems using mathematical, scientific, computational and analytical skills.
- Ability to critically synthesize and evaluate information related to transportation engineering problems.
- Ability to communicate effectively both in oral and written forms.

Special rationale for selecting these learning outcomes (optional):

These outcomes were selected to maintain consistency with the Student Learning Outcomes for the M.S. in Civil Engineering degree of the Department of Civil Engineering at Kansas State University that had been previously approved by the Graduate School.

<u>Relationship to K-State Student Learning Outcomes</u> (insert the program SLOs and check all that apply):

Program SLOs	University-wide SLOs (Graduate Programs)			Program SLO is conceptually different from university SLOs
	Knowledge	Skills	Attitudes and Professional Conduct	
1. Ability to solve advanced transportation engineering problems using mathematical, scientific, computational and analytical skills	X	X		
2. Ability to critically synthesize and evaluate information related to transportation engineering problems		X		
3. Ability to communicate effectively both in written and oral forms		X	X	

Alignment Matrix

Program SLOs	***Graduate Certificate Program in Transportation Engineering***		
	Core Courses	Electives	Experience, Mentoring, etc.
1. Ability to solve advanced transportation engineering problems using discipline appropriate math, science, computation and analysis skills	X	X	X
2. Ability to critically synthesize and evaluate information related to transportation engineering problems	X	X	X
3. Ability to communicate effectively both in written and oral forms	X	X	X
University Graduate SLOs			
Knowledge	X	X	
Skills	X	X	
Attitudes and Professional Conduct			X

2. How will the learning outcomes be assessed? What groups will be included in the assessment?

Learning Outcomes	Measures			Who will be assessed?
	Direct	Indirect	Not sure	
1. Ability to solve advanced transportation engineering problems mathematical, scientific, computational and analytical skills	• Assessment of student research paper and/or technical presentations by the instructor or the committee *	• Course grades and overall GPA • Student/Faculty interaction		All students
2. Ability to critically synthesize and evaluate information related to transportation engineering problems	• Assessment of student research paper and/or technical presentation by the instructor or by the committee*	• Course grades and overall GPA • Student/Faculty interaction		All students
3. Ability to communicate effectively both in written and oral forms	• Assessment of student research paper and/or technical presentation by the instructor or the committee*	• Student/Faculty interaction		All students

*** a copy of the assessment tool is attached to this plan**

3. When will these outcomes be assessed? When and in what format will the results of the assessment be discussed?

SLO-related data will be assembled on an annual basis during the spring semester following the calendar year.

The assembled data will be assessed by the Certificate Program Faculty and the Graduate Studies Committee on an annual basis during the spring semester following the calendar year.

Assessment results will be discussed during the Department's Annual Faculty Retreat held prior to the beginning of the fall semester.

4. What is the unit's process for using assessment results to improve student learning?

During the Department's Annual Faculty Retreat, the CE faculty will discuss the assessment results, recommendations from the Graduate Studies Committee, and will propose appropriate changes that may be needed. In all cases, assessments will be compared to the established SLO-baselines to monitor improvement and stability in student performance and learning.

Kansas State University
Department of Civil Engineering

Assessment Form for the Transportation Engineering Certificate Program

[Assessment is conducted, after completion of core course and the oral exam, by the instructor or members of the examining committee]

Student Name:_____

Date:_____

Part A): Assessment of the candidate's ability in relation to the Civil Engineering M.S. Student Learning Outcomes:

	STUDENT LEARNING OUTCOME	**RATING**			
		Excellent	**Good**	**Fair**	**Poor**
1)	*Ability to solve advanced engineering problems using math, science, computation and analysis skills*	**4**	**3**	**2**	**1**
2)	*Ability to critically synthesize and evaluate information*	***4***	***3***	***2***	***1***
3)	*Ability to communicate effectively both in written and oral forms*	**4**	**3**	**2**	**1**

Describe the degree of interaction you had with the student during this course or research paper presentation

High	**Medium**	**Low**	**Very Low**
4	3	2	1

If applicable, please complete Part B.

Part B): It is the recommendation of the committee that this candidate should be permitted to continue graduate work toward the M.S./ Ph.D. in Civil Engineering at Kansas State University (if applicable).

Approved	**Disapproved**
_____	_____
_____	_____
_____	_____
_____	_____

Additional Comments:

On behalf of the Academic Affairs Committee, Todd Easton, chair, proposed to table the following expedited course change. The motion passed.

Expedited Course Change
MC 745 Communication and Leadership

5) Graduate Student Affairs Committee – Carol Shanklin
The committee is currently working on the suggestions from Faculty Senate to revise Appendix A, Graduate Student Rights and Grievance Procedure and documenting the Reinstatement Process for incorporation in the Graduate Handbook.

6) Graduate School Committee on Planning – Mustaque Hossain, Chair
- First Reading. Changes to the Graduate Handbook, Chapter 6, Graduate Council Constitution, By-Laws, and Procedures – Section B – By-Laws of the Graduate Council - B.1 Graduate Council Membership from Academic Areas

Following discussion, a motion was made to approve the first reading, changes to the Graduate Handbook, Chapter 6, Graduate Council Constitution, By-Laws, and Procedures – Section B – By-Laws of the Graduate Council - B.1 Graduate Council Membership from Academic Areas. The motion passed. The changes discussed will be incorporated in the second reading at the April 7, 2009 Graduate Council meeting.

- First Reading. Changes to the Graduate Handbook, Chapter 6, Graduate Council Constitution, By-Laws, and Procedures – Section B – By-Laws of the Graduate Council
- B.2. Graduate Council Membership from Colleges

Following discussion, a motion was made to approve the first reading, changes to the Graduate Handbook, Chapter 6, Graduate Council Constitution, By-Laws, and Procedures – Section B – By-Laws of the Graduate Council- B.2. Graduate Council Membership from Colleges. The motion passed. The changes discussed will be incorporated in the second reading at the April 7, 2009 Graduate Council meeting.

- First Reading. Changes to the Graduate Handbook, Chapter 2, The Master's Degree – Section C – The Program of Study

Following discussion, a motion was made to approve the first reading, changes to the Graduate Handbook, Chapter 2, The Master's Degree – Section C – The Program of Study. The motion passed. The changes discussed will be incorporated in the second reading at the April 7, 2009 Graduate Council meeting.

- First Reading. Changes to the Graduate Handbook, Chapter 3, The Doctoral Degree – Section C – The Program of Study

Following discussion, a motion was made to approve the first reading, changes to the Graduate Handbook, Chapter 3, The Doctoral Degree – Section C – The Program of Study. The motion passed. The changes discussed will be incorporated in the second reading at the April 7, 2009 Graduate Council meeting.

- First Reading. Changes to the Graduate Handbook, Chapter 3, The Doctoral Degree – Section D – Courses - D.6 Transfer of Credit

Following discussion, a motion was made to approve the first reading, changes to the Graduate Handbook, Chapter 3, The Doctoral Degree – Section D – Courses - D.6 Transfer of Credit. The motion passed. The changes discussed will be incorporated in the second reading at the April 7, 2009 Graduate Council meeting.

7) Graduate School Committee on Assessment and Review – Bob Rowland, Chair

Bob Rowland reported that Brianna Nelson and Steve Hawks presented a brief assessment overview, shared comments from the 2008 Board of Regents review and listened to feedback from the committee regarding the assessment process at the February meeting.

8) Graduate Student Council Information – Shiva Garimella, President

Shiva Garimella presented the following update of the Graduate Student Council's (GSC) activities:
- K-State Research Forum: March 6, 2009
- Capitol Graduate Research Summit: March 12, 2009
- Travel Grant Deadline: April 15, 2009 (July 1st – October 31st travel period)
- Grant Writing Professional Development Seminar: March 26, 2009, 4:30-5:30 p.m. - room 213

9) University Research and Scholarship

- Information about the Saracheck Predoctoral Honors Fellowship can be found on the Graduate School website at: http://www.k-state.edu/grad/sarachekaward/welcome.htm. The deadline to submit applications is March 10, 2009)

10) Other business

- Graduate Council Election

Graduate faculties were encouraged to participate in the Graduate Council Election. Ballots will be email the week of March 16-20.

11) Graduate School Calendar of Events

- New Graduate Faculty Orientation: April 8th – 11:30-1:00 pm – KSU Union 213
- New Graduate Program Directors/Contact Staff Orientation: April 8th – 3:30-5:00 pm – KSU Union 206

Council was adjourned at 4:20 p.m.