Moon Won

Contact Information

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Education

Ph.D.	Civil Engineering (Transportation Engineering)	The University of Texas at Austin
M.S.	Civil Engineering (Transportation Engineering)	The University of Texas at Austin
B.S.	Civil Engineering	Seoul National University, Korea

Professional Experience

Professor	2012 – present	Department of Civil & Environmental Engineering Texas Tech University (TTU)
Director, Center for Multidisciplinary Research in Transportation (TechMRT)	2022 – present	
Associate Professor	2008 – 2012	Department of Civil & Environmental Engineering Texas Tech University (TTU)
Research Associate Professor	2004 – 2008	Department of Civil, Architectural & Environmental Engineering, Center for Transportation Research The University of Texas at Austin (UT-Austin)
Design & Materials Engineer	1990 – 2004	Texas Department of Transportation

Professional Service

- Editorial Board Member – International Journal of Concrete Structures and Materials. (2005 – present)
- Ad-Hoc Manuscript Reviewer (*Transportation Research Record, ACI (American Concrete Institute) Materials Journal, ASCE Journal of Performance of Constructed Structures, ASCE Journal of Materials in Civil Engineering, ASCE Journal of Transportation, Journal of Construction and Building Materials, International Journal of Pavement Engineering)*
- Editor – Geohunan International Conference (2009, 2011)
- Steering Committee -- National Conference on Preservation, Repair, and Rehabilitation of Concrete Pavements (2009)
- Geohunan International Conference (International Advisory Committee; 2009, 2011)
- Proposal Review Panel -- Science and Technology Center in Ukraine (STCU) (2005)
- Session Chair – *Geohunan International Conference (2009, 2011), Changsha, China*
- Session Chair – *7th International Conference on Sustainable Aggregates, Asphalt Technology, and Pavement Engineering (2008), Liverpool, England*
- Member
    - TRB (Transportation Research Board) Committees
        - ASF60 (Subsurface Drainage) (2008 – 2013)
        - AFN20 (Properties of Concrete) (2002 – 2010)
    - ICAR (International Center for Aggregate Research)
        - Technical Advisory Committee (2004 – 2009)
    - FHWA (Federal Highway Administration)
        - ACPT (Advanced Concrete Pavement Technology) Program; Technical Advisory Committee (2003 – 2013)

        - FHWA-CRSI (Concrete Reinforcing Steel Institute) CRCP (Continuously Reinforced Concrete Pavement) Expert Task Group (2008 – 2013)
        - HIPERPAV Project; Internal Technical Advisory Panel (1999 – 2003)
    - ASTM (American Society for Testing and Materials) Committee
        - C09 (Concrete and Concrete Aggregates) (2003 – 2006)
    - ACI (American Concrete Institute)
        - Committee 325 (Concrete Pavement)
    - Pooled Fund Study
        - Technical Advisory Panel for TPF-5(066) "Materials and Construction Optimization for Prevention of Premature Pavement Distress in PCC Pavements," (2003 – 2004)
    - SHRP2 (Strategic Highway Research Program)
        - Working Group for Project R07: Performance Specifications for Rapid Renewal (2011 – 2013)
    - Innovative Research Foundation Program
        - Internal Technical Advisory Panel for Ultrathin Whitetopping Project (1999 – 2002)
    - Texas Department of Transportation
        - Technical Advisory Panel for Pavement and Construction (TAP-1) (2007 – 2012)
        - Concrete Pavement Working Group (2013 – present)

Publications

Journal Articles: (Peer Reviewed)

1. Rouzmehr, F., Bae, S. W., Won, M.-C. (2023). Reinforcement design optimization for continuously reinforced concrete pavement: one-mat vs. two-mat. *International Journal of Pavement Engineering, 24*, 16. DOI: 10.1080/10298436.2023.2273325
2. Poudyal, L., Adhikari, K., Won, M. (2021). Mechanical and Durability Properties of Portland Limestone Cement (PLC) Incorporated with Nano Calcium Carbonate (CaCO3). *Materials, 905*(14).
3. Hong, G., Kim, J., Yeon, J. H., Won, M., Choi, S. (2021). Comparison of Stress Fields near Longitudinal Construction Joints of Tied and Doweled Sections in Portland Cement Concrete Pavements. *Sustainability*.
4. Rouzmehr, F., Choi, P., Nam, J., Won, M. (2021). Improvements of Quality Assurance Testing Program for Subgrade and Base Layer Construction. *Construction and Building Materials, 310*(125157).
5. Jeon, S., Choi, P., Won, M. (2021). Punchout evaluations and classification of continuously reinforced concrete pavement to improve pavement design. *Road Materials and Pavement Design, 22*(7), 1481-1499.
6. Poudyal, L., Adhikari, K., Won, M. (2021). Nano Calcium Carbonate (CaCO3) as a Reliable, Durable and Environment-Friendly Alternative to Diminishing Fly Ash. *Materials*.
7. Choi, P., Poudyal, L., Rouzmehr, F., Won, M. (2020). Spalling in Continuously Reinforced Concrete Pavement in Texas. *Transportation Research Record, 2674*(11), 731-740.
8. Choi, P., Kim, D.-H., Lee, B.-H., Won, M.-C. (2016). Application of ultrasonic shear wave tomography to identify horizontal crack or delamination in concrete pavement and bridge. *Construction and Building Materials, 121*, 81-91.
9. Choi, S., Na, B., Won, M.-C. (2016). Mesoscale Analysis of CRCP Behavior Subjected to Environmental Loading. *Construction and Building Materials, 121*, pp. 81-91
10. Choi, P., Kim, D.-H., Lee, B.-H., Won, M. (2016). Evaluation of structural responses of CRCP using falling weight deflectometer. *Canadian Journal of Civil Engineering, 43(1)*, pp. 28-39
11. Chen, D. H., Choi, P., Chen, K. Y., Won, M.-C. (2016). Slot stitching for longitudinal joint separation repairs. *Construction and Building Materials, 115*, 153-162.
12. Choi, S., Ha, S., and **Won, M.** (2015) "Mechanism of Transverse Crack Development in Continuously Reinforced Concrete Pavement at Early Ages" *Transportation Research Record 2524*, Transportation Research Board, National Research Council, Washington D.C., pp. 42-58.
13. Zhou, W., Choi, P., Ryu, S., and **Won, M.** (2015) "Evaluation of Pavement Support for Pavement Design," *ASCE Journal of Transportation Engineering*, ASCE, Vol 141, No. 9
14. Chen, D. and **Won, M.** (2015) "CAM and SMA mixtures to delay reflective cracking in PCC pavements," *Journal of Construction and Building Materials*, Vol. 96, pp. 226 - 237.
15. Zhou, W., Choi, P., Saraf, S., Ryu, S. and **Won, M.** (2014) "Premature Distresses at Transverse Construction Joints in Continuously Reinforced Concrete Pavement," *Journal of Construction and Building Materials*, Vol. 55, pp. 212- 219.

16. Chen, D., Zhou, W., Yi, W. and **Won, M.** (2014) "Full-depth Concrete Pavement Repair with Steel Reinforcements," *Journal of Construction and Building Materials*, Vol. 51, pp. 344 - 351.
17. Ryu, S.W., Choi, P.G., Choi, S., and **Won, M.** (2013) "Improvements of Full Depth Repair Practices for CRCP Distresses" accepted for publication at *Transportation Research Record 2368*, Transportation Research Board, National Research Council, Washington D.C., pp. 102-113.
18. Yeon, J., Choi, S., **Won, M.** (2013). Evaluation of Zero-Stress Temperature Prediction Model for Portland Cement Concrete Pavements. *Construction and Building Materials,* Vol. 40, pp. 492-500.
19. Yeon, J., Choi, S., Ha, S. and **Won, M.** (2013) "Effects of Creep and Built-in Curling on Stress Development of Portland Cement Concrete Pavement under Environmental Loading," *ASCE Journal of Transportation Engineering*, Vol. 139, No. 2, pp. 147-155.
20. Nam, B.H., Suh, C. and **Won, M.** (2013) "Fatigue-Life Prediction of Full-Scale Concrete Pavement Overlay over Flexible Pavement: Super-Accelerated Pavement Testing Application," *ACI Materials Journal*, Vol. 110, No. 1, pp. 13-22.
21. Ryu, S. W., Won, H., Choi, S., **Won, M.** (2013) "Continuously Reinforced Bonded Concrete Overlay of Distressed Jointed Plain Concrete Pavements," *Construction and Building Materials,* Vol. 40, pp. 1110-1117.
22. Yeon, J., Choi, S., **Won, M.** (2013) "In-Situ Measurement of Coefficient of Thermal Expansion in Hardening Concrete and Its Effect on Thermal Stress Development," *Construction and Building Materials*, Vol 38, pp. 306-315.
23. Choi, S., Yeon, J. and **Won, M.** (2012) "Improvements of Curing Operations for Portland Cement Concrete Pavement," *Construction and Building Materials,* Vol. 35, pp. 597-604.
24. Ryu, S.W., Jaiswal, H., Choi, S., Senadheera, S., Jayawickrama, J. and **Won, M.** (2012) "Rational Use of Terminal Anchorages in Portland Cement Concrete Pavement," *Transportation Research Record 2305,* Transportation Research Board, National Research Council, Washington D.C., pp. 62-73.
25. **Won, M.** (2011) "Continuously Reinforced Concrete Pavement: Identification of Distress Mechanisms and Improvement of Mechanistic-Empirical Design Procedures," *Transportation Research Record 2226,* Transportation Research Board, National Research Council, Washington D.C., pp. 51-59
26. Choi, S., Ha, S., and **Won, M.** (2011) "Horizontal Cracking of Continuously Reinforced Concrete Pavement under Environmental Loadings," *Journal of Construction and Building Materials*, Vol. 25, Issue 11, pp. 4250-4262.
27. Sun, R.J., Won, H., and **Won, M.** (2011) "Application and Early-Age Behaviors of Continuously Reinforced Bonded Concrete Overlay of Distressed Jointed Concrete Pavements," *Journal of Testing and Evaluation*, American Society for Testing and Materials.
28. Chen, D.H., **Won, M.**, and Hong, F. (2011) "Dowel Bar Retrofit (DBR) Performance in Texas," *Journal of Construction and Building Materials*, Vol. 25, Issue 4, pp. 1762-1771.
29. Choi, S. and **Won, M.** (2010) "Thermal Strain and Drying Shrinkage of Concrete Structures in the Field," *ACI Materials Journal*, Vol. 107, No. 5, pp. 498-507.
30. Choi, S. and **Won, M.** (2010) "Time-Dependent Behavior of Post-tensioning Concrete Pavements under Environmental Loading," *Transportation Research Record 2154,* Transportation Research Board, National Research Council, Washington D.C., pp. 44-56.
31. Ha, S., Choi, S. and **Won, M.** (2010) "Behavior of Tied Multiple-Lane Portland Cement Concrete Pavement: Effects of Environmental Loading and Dowel Bar Use," *Transportation Research Record 2154,* Transportation Research Board, National Research Council, Washington D.C., pp. 57-77.
32. Choi, S. and **Won, M.** (2009) "Design of Tie Bars in Portland Cement Concrete Pavement Considering Nonlinear Temperature Variations," *Transportation Research Record 2095,* Transportation Research Board, National Research Council, Washington D.C., pp. 24-33.
33. Yeon, J.H., Choi, S. and **Won, M.** (2009) "Effect of Relative Humidity on Coefficient of Thermal Expansion of Hardened Cement Paste and Concrete," *Transportation Research Record 2113,* Transportation Research Board, National Research Council, Washington D.C., pp. 83-91.
34. Chen, D.H., **Won, M.** and Hong, F. (2009) "Investigation of Settlement of a Jointed Concrete Pavement" Journal of Performance of Constructed Facilities, *ASCE*, Vol. 23, Issue 6, pp. 440-446.
35. Chen, D.H., **Won, M.** and Zhang, Q. and Scullion, T. (2009) "Field Evaluations of the Patch Materials for Partial-Depth Repairs" Journal of Materials in Civil Engineering, *ASCE*, Vol. 21, Issue 9, pp. 518-522.

36. Chen, D.H., Suh, C. and **Won, M.** (2009) "Lessons Learned from Field and Laboratory Testing of a DBR Project" Journal of Performance of Constructed Facilities, *ASCE,* Vol. 23, Issue 3, pp. 175-180.
37. Chen, D.H., **Won, M.** and Zha, X. (2008) "Performance of Dowel Bar Retrofit (DBR) Projects in Texas" Journal of Performance of Constructed Facilities, *ASCE,* Vol. 22, Issue 3, pp. 162-170.
38. Chen, D.H. and **Won, M.** (2008) "Field Performance Monitoring of Repair Treatments on Joint Concrete Pavements" *Journal of Testing and Evaluation*, ASTM Vol. 36, Number 2. pp. 119-127.
39. Chen, D.H. and **Won, M.** (2007) "Field Investigations of Cracking on Concrete Pavements" *Journal of Performance of Constructed Facilities*, ASCE, Vol. 21, Issue 6, pp. 450-458.
40. Nam, J., Kim, D., Choi, S., and **Won, M.** (2007) "Variation of Crack Width over Time in Continuously Reinforced Concrete Pavement," *Transportation Research Record 2037*, Transportation Research Board, National Research Council, Washington D.C., pp. 3-11.
41. Joh, S.H, Kang, T.H., Kwon, S.A., and **Won, M.** (2006) "Accelerated Stiffness Profiling of Aggregate Bases and Subgrades for Quality Assessment of Field Compaction" *Transportation Research Record 1975,* Transportation Research Board, National Research Council, Washington D.C., pp. 63-72.
42. Nam, J., Kim, S.M., and **Won, M.** (2006) "Measurement and Analysis of Early-Age Concrete Strains and Stresses: Continuously Reinforced Concrete Pavement under Environmental Loading," *Transportation Research Record 1947,* Transportation Research Board, National Research Council, Washington D.C., pp. 79-90.
43. **Won, M.** (2005) "Improvements of Testing Procedures for Concrete Coefficient of Thermal Expansion," *Transportation Research Record 1919,* Transportation Research Board, National Research Council, Washington D.C., pp. 23-28.
44. Chen, D.H., Scullion, T., Bilyeu, J. and **Won, M.** (2005) "Detailed Forensic Investigation and Rehabilitation Recommendation on Interstate Highway-30" *Journal of Performance of Constructed Facilities*, ASCE. Vol. 19, Issue 2, pp. 155-164.
45. Kim, S. M., and **Won, M.** (2004) "Horizontal Cracking in Continuously Reinforced Concrete Pavements," *ACI Structural Journal*, Vol. 101, No. 6, 2004, pp. 784-791.
46. Kim, S.-M., **Won, M.**, and McCullough, B. F. (2003). "Mechanistic Modeling of Continuously Reinforced Concrete Pavement," *ACI Structural Journal*, Vol. 100, No. 5, American Concrete Institute, pp. 674-682.
47. Kim, S.M., **Won, M.**, and McCullough, B.F. (2002). "Dynamic Stress Response of Concrete Pavements to Moving Tandem-axle Loads," *Transportation Research Record 1809,* Transportation Research Board, National Research Council, Washington D.C., pp. 32-41.
48. Kim, S.M., **Won, M.**, and McCullough, B.F. (2000). "Three-Dimensional Analysis of Continuously Reinforced Concrete Pavements," *Transportation Research Record 1730*, Transportation Research Board, National Research Council, Washington D.C., pp. 43-52.
49. Kim, S.M., **Won, M.**, and McCullough, B.F. (1998). "Numerical Modeling of Continuously Reinforced Concrete Pavement Subjected to Environmental Loads," *Transportation Research Record 1629*, Transportation Research Board, National Research Council, Washington D.C., pp. 76-89.
50. **Won, M.** & Fu, C. (1996). "Evaluation of Laboratory Procedures for Aggregate Polish Test," *Transportation Research Record 1547*, Transportation Research Board, National Research Council, Washington D.C., pp. 23-28.
51. **Won, M.** & Ho, M. (1994). "Effect of Antistrip Additives on Polymer-Modified Asphalt Binders and Mixtures," *Transportation Research Record 1436*, Transportation Research Board, National Research Council, Washington D.C., pp. 108-114.

Licenses and Certificates

EIT – August, 1988
P.E. – July, 1983 (Texas no. 76918)

Selected Presentations (Invited *)

1. * CRCP Slab Thickness, not as critical as you may think, *ASCP 7th Concrete Pavements Conference*, Australian Society for Concrete Pavements, October 23, 2023, North Wollongong, NSW Australia

2. * Importance of Materials and Construction Quality for CRCP Performance, *ASCP 7th Concrete Pavements Conference*, Australian Society for Concrete Pavements, October 24, 2023, North Wollongong, NSW Australia
3. *Continuously Reinforced Concrete Pavement in Texas (Distinguished Lecture), *TxDOT/Cement Council of Texas Concrete Conference*, November 18, 2021, Austin Texas)
4. *****Continuously Reinforce Concrete Pavement in the US, 2015 World Road Congress, Nov 3, 2015, Seoul, Korea
5. *****Performance History of CRCP in Texas and Mechanistic-Empirical Design for CRCP in Texas, 7th *TxDOT/CCT Concrete Conference*, December 5, 2012, Austin, TX.
6. Evaluation of Portland Cement Concrete Pavement on US290 in Houston, Texas, 2012 Long-Life Pavement Conference, September 19, 2012, Seattle, WA
7. *****Texas Experience and Directions with CRCP, *2011 Transportation Research Board (TRB) Webinar – Improved Practices for Design and Construction of Continuously Reinforced Concrete Pavement*, April 20, 2011.
8. Identification of CRCP Distress Mechanisms & Development of Mechanistic-Empirical CRCP Design Procedures, 90th *TRB Annual Meeting*, January, 2011, Washington, D.C.
9. *****Mechanistic-Empirical Pavement Design for Continuously Reinforced Concrete Pavement, *6th TxDOT/CCT Concrete Conference*, December 8, 2010, Austin, TX.
10. *****TxDOT Rigid Pavement Database, *6th TxDOT/CCT Concrete Conference*, December 7, 2010, Austin, TX.
11. *****Pilot Implementation of CRCP Overlay on Jointed Concrete Pavement, *84th TxDOT Short Course*, October 13, 2010, College Station, TX.
12. Design and Construction of CRCP Overlay on Deteriorated Jointed Concrete Pavement, *TxDOT/FHWA Open House*, May 20, 2010, Sherman, TX.
13. *****Behavior and Performance of Cast-in-Place Post-Tensioned Concrete Pavement, *2010 PTI Technical Conference*, May 3, 2010, Fort Worth, TX.
14. Creating Long Life Pavement Solutions – CRCP, *FHWA-CRSI Workshop*, February 4, 2010, Oklahoma City, OK.
15. *****Identification of Compliance Testing Method for Concrete Curing Effectiveness, 46th *American Concrete Paving Association Annual Meeting*, December 4, 2009, Orlando, FL.
16. *****Updating Continuously Reinforced Concrete Pavement Design Analysis, *51st International Highway Engineering Exchange Program*, September 29, 2009, San Antonio, TX.
17. *****Continuously Reinforced Concrete Pavement in Texas, *2009 National Concrete Consortium Meeting*, April 2, 2009, San Antonio, TX.
18. Cast-in-Place Post-Tensioned Concrete Pavement Behavior, *TxDOT/FHWA Open House*, May 14, 2009, Waco, TX.
19. ***** Cast-in-Place Post-Tensioned Portland Cement Concrete Pavement, *2009 PTI Technical Conference*, May 5, 2009, Portland, OR.
20. Effect of Relative Humidity on Coefficient of Thermal Expansion of Hardened Cement Paste and Concrete, *88th TRB Annual Meeting*, January, 2009, Washington, D.C.
21. *****CRCP Distresses in Texas, 5th *TxDOT/CCT Concrete Conference*, November 12, 2008, Austin, Texas.
22. *****Mechanistic Tie Bar and Transverse Steel Design, 5th *TxDOT/CCT Concrete Conference*, November 12, 2008, Austin, TX.
23. *****Design Principles of CRCP & Case Studies from the U.S. *CRCP Design Practice and International Experience Workshop*, August 17, 2008, San Francisco, CA.
24. Behavior and Performance of Continuously Reinforced Concrete Pavement, *9th International Conference on Concrete Pavements*, August 18, 2008, San Francisco, CA.
25. *****CRCP Behavior and Performance, *SPTC (State Pavement Technology Consortium) Annual Meeting*, March 18, 2008, Austin, TX.
26. Terminal Anchorage System for Concrete Pavements, *TxDOT Construction Conference*, February, 2008, Houston, TX.
27. Innovative Tie Bar and Transverse Steel Designs in Portland Cement Concrete Pavements, *9th International Conference, Sustainable Aggregates, Asphalt Technology and Pavement Engineering*, February, 2008, Liverpool, UK
28. Rehabilitation of Continuously Reinforced Concrete Pavement with Bonded Overlay, *5th International Conference on Maintenance and Rehabilitation of Pavements*, August 10, 2007, Park City, UT.
29. Use of Crushed Concrete as Aggregates in Continuously Reinforced Concrete Pavement, *5th International Conference on Maintenance and Rehabilitation of Pavements*, August 10, 2007, Park City, UT.

30. Long-Term Performance of Continuously Reinforced Concrete Pavement in Texas, *International Conference on Long-Life Concrete Pavement*, October, 2006, Chicago, IL.
31. Long-Term Performance of Prestressed Concrete Pavement on IH35 in Texas, *International Conference on Long-Life Concrete Pavement*, October, 2006, Chicago, IL.
32. *****CRCP Crack Behavior in Changing Moisture Conditions, *4th TxDOT/CCT Concrete Conference*, October 31, 2006, Austin, TX.
33. *****Concrete Using Optimized Aggregate Gradation, *80th TxDOT Short Course*, October 11, 2006, College Station, TX.
34. J.J Pickle Center Research Report, *2006 TACA (Texas Aggregate and Concrete Association) Short Course*, March, 2006, Lakeway, TX.
35. Evaluation of 2002 ME Guide for Continuously Reinforced Concrete Pavement, *Four States ME Design Meeting*, August, 2005, Seattle, WA.
36. Improvements for Testing Procedures for Concrete Coefficient of Thermal Expansion, *84th TRB Annual Meeting*, January, 2005, Washington, D.C.
37. *****Continuously Reinforced Concrete Pavement in Texas: Performance and Experience, *Georgia DOT & ACPA SE Chapter - Portland Cement Concrete Pavement Conference*, October, 2004, Macon, GA.
38. High Performance Century Pavement, *78th TxDOT Short Course*, October, 2004, College Station, TX.
39. Forensic Evaluations of Concrete Pavement Distress, *TxDOT Construction Conference*, March, 2004, San Antonio, TX.
40. Concrete Pavement Research Implementation, *77th TxDOT Short Course*, October, 2003, College Station, TX.
41. Use of High Performance Concrete, *77th TxDOT Short Course*, October, 2003, College Station, TX.
42. Revised TxDOT Concrete Pavement Design Standards and Rigid Pavement Design Guide, *TxDOT Design Conference*, August, 2003, Corpus Christi, TX.
43. Alkali Silica Reaction & Delayed Ettringite Formation, *ACI Houston Chapter Meeting*, July, 2003, Houston, TX.
44. Premature Concrete Deterioration due to ASR/DEF in Texas, *International Center for Aggregate Research Conference*, April, 2003, Austin, TX.
45. Changes in TxDOT Concrete Specifications. *ACI Dallas Chapter Meeting,* April, 2003, Dallas, TX.
46. Concrete 101 and Durability, *76th TxDOT Short Course*, October, 2002, College Station, TX.
47. Concrete Pavement Forensic Investigations, *75th TxDOT Short Course*, October, 2001, College Station, TX.
48. Other States Concrete Pavement Requirements, *75th TxDOT Short Course*, October, 2001, College Station, TX.
49. TxDOT's Response to the Issue of Premature Concrete Deterioration, *ACI* San Antonio & Austin Chapter Meeting, April and March, 2001, San Antonio and Austin, TX.
50. Effect of Coarse Aggregate on Concrete Pavement Performance, *International Center for Aggregate Research Conference*, March 2001, Austin, TX.
51. TxDOT's Design Procedures for Concrete Pavements, *1st TxDOT/CCT Concrete Conference*, December, 2000, Austin, TX.
52. Means to Achieve and Measure Properties of Concrete for Durability, *74th TxDOT Short Course*, October, 2000, College Station, TX.
53. Changes in Concrete Pavement Specifications, – Associated General Contractors (AGC)/TxDOT Regional Concrete Construction Seminars, Feb – March, 2000, San Antonio, Houston, Dallas, El Paso & Lubbock, TX.
54. Alkali-Silica Reaction in Concrete, *73rd TxDOT Short Course*, October, 1999, College Station, TX.
55. Ultrathin Whitetopping, *73rd TxDOT Short Course*, October, 1999, College Station, TX.
56. Use of Recycled Concrete as Aggregates for Pavement Concrete, *International Center for Aggregate Research Conference*, March 1999, Austin, TX.
57. Use of Recycled Concrete as Aggregates for Pavement Concrete, *78th TRB Annual Meeting*, January, 1999, Washington, D.C.
58. Numerical Modeling of Continuously Reinforced Concrete Pavement Subjected to Environmental Loads, *77th TRB Annual Meeting*, January, 1999, Washington, D.C.
59. Use of Recycled Concrete as Aggregates for Pavement Concrete, *72nd TxDOT Short Course*, October, 1998, College Station, TX.

Teaching Experience

Courses Taught at TTU

CE 2301	Statics
CE 3361	Transportation Engineering
CE 4351	Pavement Materials and Design
CE 5331-001	Airport Design
CE 5331-010	Forensic Engineering
CE 5343	Advanced Reinforced Concrete Design
CE 5351	Advanced Pavement Materials
CE 5354	Advanced Concrete Materials
CE 5355	Rigid Pavement Design