Systems Engineering at Texas Tech University

Expertise and Research Areas
Effective Management of Technology
Energy Systems
Intelligent Software Systems
Nanomaterials
Pulsed Power Systems
Team and Organizational Learning Systems
Transportation Systems
SE Departments

Industrial Engineering (Lead)
Civil Engineering
Computer Science
Electrical and Computer Engineering
Mechanical Engineering
TTU Research Center Capabilities

Advanced Intelligent Systems (CAIS)
Nanotech Center (NTC)
Pulsed Power and Power Electronics (P3E)
Transportation Systems (TechMRT)
Wind Science and Engineering Research (WISE)

- Murdough Center for Engineering Professionalism (NIEE)
- Center for Engineering Outreach
- Water Resources Center (WRC)
Researchers - Industrial Engineering

Dr. David Wyrick, P.I.
Dr. Mario Beruvides, Co-P.I.
Dr. Jennifer Farris
Dr. Tim Matis
Dr. James Simonton
Researchers - Engineering

Dr. Dan Cooke, CS, CAIS Director
Dr. Joe Urban, CS Chair
Dr. Mark Holtz, Physics, NTC Co-Director
Dr. Jordan Berg, ME, NTC Co-Director
Dr. Magne Kristiansen, ECE, P3E Director
Phil Nash, CE, TechMRT Director
Dr. Andy Swift, CE, WISE Director
Sample Research Projects

Information systems for NASA exploration (Dan Cooke)

New spectrum-specific materials (IR, blue-green, UV) for LED’s lasers, photodetection (NTC)

Energy devices, electronic jammers, IED-defeat devices, non-lethal crowd control (P3E)
Sample Research Projects

Rapid replacement of damaged bridges, national performance measure benchmarking, asset and life cycle management (TechMRT)

Debris impact testing, wind energy production (WISE)
Research Strengths

Total system approaches
Quantification and optimization
People-System issues
Benchmarking and decision making
Intelligent systems integration
Potential Research Topics

Net-centric future warfare systems
Virtual team design and development
Lean system learning for rapid response
Benchmarking system performance improvement
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From here, it’s possible!

QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.