

AEROSPACE ENGINEERING

Enrollment Fall 2008

Undergraduate Students	645	Graduate Students	128
Average SAT Score	1223	Ph.D.	61
		Master's	67

Quality Indicators

Total Faculty	34	U.S. News & World Report Rankings	Endowed Chair Holders	5
Professors	17	Rankings Among Public Institutions	Endowed Professorship Holders	4
Associate Professors	7	8 Undergraduate	National Academy of Engineering Members	2
Assistant Professors	7	8 Graduate		
Non-tenured/Non-tenure Track	3			

Centers and Laboratories

Academic Center for Aging Aircraft	Flight Research Laboratory	Propulsion Laboratory
AggieSat Lab Student Satellite Program	Flight Simulation Laboratory	Texas A&M National
Center for Autonomous Robotic and UAV Systems	General Materials Laboratory	Aerothermochemistry Laboratory
Center for Mechanics and Control	Klebanoff/Saric Unsteady/Quiet Wind Tunnel	• Actively Controlled Expansion Hypersonic Tunnel
Center for Mechanics of Composites	Laser Diagnostics for Combustion and Propulsion	• Ames Supersonic Tunnel
Consortium for Autonomous Space Systems	Materials and Testing Laboratory	• Mach 7 Shock Tunnel
Damping Laboratory	NASA URETI Texas Institute for Intelligent	• NASA Langley Mach 6 Quiet Tunnel
Electroactive Materials Robotics Laboratory	Bio-Nano Materials and Structures (TiIMS)	• Supersonic Pilot Tunnel
Electromechanical Characterization Laboratory	Oran W. Nicks Low-Speed Wind Tunnel (TEES)	Wave Propagation Laboratory

Research Areas

Aerodynamics and Fluid Mechanics

Active Flow Control
 Aerodynamics
 Aerothermochemistry
 Combustion
 Compressible, Hypersonic and Plasma
 Turbulence Theory, Modeling and Experiments
 Flight Measurements of Air Quality
 Gas Dynamics
 High-Speed Aerodynamics and Heat Transfer
 Kinetic Theory-Based CFD
 Laser Diagnostics
 Micro and Nanosatellite Design
 Novel Flow Diagnostics Instrumentation Development
 Propulsion
 Responsive Space Missions
 Roughness
 Turbomachinery
 Turbulent Flames
 Wind-Tunnel, Flight Experiments and CFD in Boundary Layer Stability and Transition, Laminar Flow Control and Low-Reynolds-Number Aerodynamics

UAV and RPV Development and Flight Test Dynamics and Controls

Aeroelasticity
 Analytical Dynamics
 Autonomous Intelligent Control
 Autonomous Systems
 Cooperative Methods for Urban Search and Rescue (USAR)
 Design of In-Space Imaging Systems
 Fault Tolerant Adaptive Control
 Formation Flying
 Intelligent Cockpit Systems and Displays
 Mission Analysis
 Morphing Air and Space Vehicle
 Navigation Sensors
 Networked Control Systems
 Nonlinear Dynamics
 Orbit and Attitude Estimation
 Realtime/Anytime Path Planning Systems with Delay
 Vision-Based Navigation Systems

Trajectory Optimization

Materials and Structures

Active Materials
 Composite Materials and Structures
 Computational Materials Science
 Computational Mechanics and Simulation
 Damage Mechanics
 Damping
 Discrete Dislocation Plasticity
 Dynamic Fracture
 Electric and Dielectric Polymers and Polymer Nanocomposites
 Ferroelectric Materials
 Fracture Mechanics
 MEMS and NEMS
 Multifunctional Materials
 Nanomaterials (Particles, Wires and Tubes)
 Nondestructive Testing and Evaluation
 Polymers

BIOLOGICAL *and* AGRICULTURAL ENGINEERING

Enrollment Fall 2008

Undergraduate Students	278	Graduate Students	62
Average SAT Score	1165	Ph.D.	20
		Master's	42

Quality Indicators

Total Faculty	22	U.S. News & World Report Rankings	
Professors	14	Rankings Among Public Institutions	
Associate Professors	2	3 Undergraduate	Endowed Chair Holders 2
Assistant Professors	4	2 Graduate	Endowed Professorship Holders 1
Non-tenured/Non-tenure Track	2		

Centers and Laboratories

Advanced Life Support Laboratory	Food Processing Systems Laboratory
Bioenergy Testing and Analysis Laboratory	Food Safety Engineering Laboratory
Biological Engineering Sensor Technologies	Irrigation Technology Center
Bioseparations Laboratory	Precision Agriculture Laboratory
Center for Agricultural Air Quality Engineering and Science	Physical Properties/Biological Materials Laboratory
Cotton Engineering Laboratory	Soil and Water Engineering Group
	Vadose Zone Research Laboratory

Research Areas

Agricultural Air Quality	Environmental and Natural Resources
Animal Waste Management	Food Process Engineering
Biofuels	Irrigation
Biological Process Systems	Machine Systems
Biosecurity	Modeling Ecological/Water Systems
Bioseparations	Precision Agriculture
Controlled Environment Agriculture	Water Quality
Cotton Processing	

BIOMEDICAL ENGINEERING

Enrollment Fall 2008

Undergraduate Students	400	Graduate Students	82
Average SAT Score	1297	Ph.D.	37
		Master's	45

Quality Indicators

Total Faculty	19	U.S. News & World Report Ranking	
Professors	5	Rankings Among Public Institutions	
Associate Professors	5	14 Graduate	Endowed Professorship Holders
Assistant Professors	10		3

Centers and Laboratories

Biomaterials Testing Laboratory	Molecular Biomechanics Laboratory
Biomedical Micro/Nanoscale Devices Laboratory	Optical Biosensing Laboratory
Cardiac Biomechanics Laboratory	Optical Imaging Laboratory
Cellular Biomechanics Laboratory	Rehabilitation Engineering Laboratory
Continuum Biomechanics Laboratory	Soft Tissue Biomechanics Laboratory
Medical Device Systems Safety Laboratory	Tissue Microscopy Laboratory

Research Areas

Anti-Fold Surface	Finite Element Methods
Biologically Inspired Materials	Human Factors and System Safety
Biomaterials	Magnetic Resonance Imaging
Biomechanics	Nano and Micro Biosensing and Imaging
Biomedical Electronics and Instrumentation	Nonlinear Optical Microscopy
Biomedical Imaging	Nonlinear Solid Mechanics
Biomedical Signal Processing	Optical Diagnostics
Biophotonics	Optical Imaging
Cardiac, Vascular and Cellular Mechanics	Optical Sensing
Clinical Engineering	Orthopedic Rehabilitation Engineering
Computational Mechanics	Polymer Colloids and Hydrogels
Computer Simulation of Biomolecules	Soft Tissue Biomechanics
Constitutive Modeling	Telemedicine
Control Theory	Tissue Engineering

Artie McFerrin Department of CHEMICAL ENGINEERING

Enrollment Fall 2008

Undergraduate Students	780	Graduate Students	145
Average SAT Score	1256	Ph.D.	75
		Master's	70

Quality Indicators

Total Faculty	31	U.S. News & World Report Rankings	Endowed Chair Holders	3
Professors	13	Rankings Among Public Institutions	Endowed Professorship Holders	7
Associate Professors	2	13 Undergraduate		
Assistant Professors	9	18 Graduate		
Non-tenured/Non-tenure Track	7			

Centers and Laboratories

Center for Asphalt and Materials Chemistry
 Mary Kay O'Connor Process Safety Center (TEES)
 Food Protein Research and Development Center (TEES)

Research Areas

Biomedical and Biomolecular

- Artificial Tissues
- Biofilms
- Biofuel Production, Including Biohydrogen
- Biomaterials
- Biosensing
- Cellular Engineering
- Conversion of Biomass
- Drug Delivery
- Metabolic Engineering
- Micro-encapsulation
- Protein Engineering
- Systems Engineering

Complex Fluids

- Chemical Waves in Hydrogels
- Crystallization and Deposition
- Light Scattering
- Mass Transfer
- Molecular Level Simulation
- Particle Technology and Colloidal Science
- Polymer Adsorption and Adhesion
- Rheological Properties
- Wetting and Thin Film Studies

Computational Chemical Engineering

- Ab Initio Calculations
- Atomistic Modeling
- Density Functional Theory
- Materials Modeling
- Nanotechnology
- Reaction Mechanisms and Rates
- Thermodynamic Property Prediction

Environmental

- Absorptive Separations
- Bioremediation
- Catalytic and Advanced Oxidation
- Integrated Biorefineries
- Organic Synthesis

- Physical/Chemical Separation Techniques
- Solvent Replacement
- Supercritical Fluid Solvents
- Wastewater Clean-Up

Materials

- Complex Multicomponent Systems
- Diffusion
- Electronic Materials
- Materials Processing
- Membrane Separations
- Polymer Properties
- Reaction Kinetics
- Rheology
- Solution Thermodynamics
- Structure Processing
- Thermodynamics
- Thin Films

Microelectronics

- Biochips
- Electrical Discharge Machining Process
- Electrode Erosion
- Mechanism of Plasma Processes
- Nano Electronics
- Novel Devices
- Particle Transport
- Plasma Phase Chemistry
- Semiconductor Devices
- Surface Reactions
- Thin Film Technologies
- Thin Film Transistors
- ULSIC

Microfluidics

- Controlled Emulsification
- Colloidal Self-Assembling

Modeling and Simulation

Nanotechnology

Process Safety

- Abnormal Situation Management
- Accident Database (Development and Analysis)
- Aerosol Generation and Modeling
- Calorimetry, Reactive Chemicals and Computational Chemistry
- Computational Fluid Dynamics Modeling
- Development of Analytical and Computational Tools
- Fires and Explosions
- Improve Process Design Software
- Inherently Safer Design and Technology
- LNG Design and Safety
- Metrics for Safety Systems
- Quantitative Risk Assessment
- Reliability and Availability
- Relief Systems Analysis
- Safety Culture and Climate
- Vapor Dispersion Modeling

Process Systems Engineering

- Process Design and Synthesis
- Process Integration
- Process Modeling, Operation and Control
- Process Optimization

Reaction Engineering

- Catalysis
- Determination of Kinetics
- Reactor Design and Configuration

Thermodynamics

- Correlations
- Equations of State
- Measurements
 - Densities
 - Phase Behavior

Zachry Department of CIVIL ENGINEERING

Enrollment Fall 2008

Undergraduate Students	1,128	Graduate Students	411
Average SAT Score	1217	Ph.D.	161
		Master's	247
		D.E.	3

Quality Indicators

Total Faculty	71	U.S. News & World Report Rankings	Endowed Chair Holders	7
Professors	27	Rankings Among Public Institutions	Endowed Professorship Holders	12
Associate Professors	20	8 Undergraduate	National Academy of Engineering Members	2
Assistant Professors	21	8 Graduate		
Non-tenured/Non-tenure Track	3			

Centers & Laboratories

Association of American Railroads Affiliated Laboratory (TTI)
 Center for Dredging Studies (TEES)
 Center for Infrastructure Engineering (TEES)
 Center for Ports & Waterways (TTI)
 Center for Sustainable Water Systems (TEES)
 Center for Transportation Safety (TTI)
 Center on Tolling Research (TTI)
 Haynes Coastal Engineering Laboratory (TEES)
 International Center for Aggregates Research (TTI)
 National Geotechnical Experimentation Site
 Offshore Technology Research Center (TEES)
 Southwest Region University Transportation Center (TTI)
 TransLink™ Research Center & Laboratory (TTI)
 University Transportation Center for Mobility (TTI)

Geotechnical Research Laboratory
 Geotechnical Undergraduate Laboratory
 High-Bay Structural & Materials Testing Laboratory
Environmental & Water Resources Engineering Laboratories
 Biological Processes Laboratory
 Chemical Processes Laboratory
 Environmental Laboratory
 Natural Systems Laboratory
 Water Resources Laboratory
Coastal & Ocean Engineering Laboratories
 Dredging Laboratory
 Hydrodynamics Laboratory
 Ocean Engineering Laboratory
Materials & Pavement Laboratories
 Advanced Characterization of Infrastructure Materials Laboratory
 Highway Materials Laboratory (TTI)
 Materials of Construction Laboratory
 Materials Science Laboratory

Construction, Geotechnical & Structural Engineering Laboratories

Construction Materials Laboratory
 Electrochemistry Laboratory
 Geotechnical Graduate Laboratory

Research Areas

Coastal Engineering

- Beach Nourishment
- Coastal Processes
- Coastal Structures
- Dredging
- Environmental Fluid Dynamics
- Storm Surges & Risks

Construction Engineering & Management

- Construction Materials
- Construction Planning & Field Operations
- Process Modeling
- Project Development & Financing
- Project Management
- Risk Management & Decision Analysis
- Stochastic Simulation

Environmental Engineering

- Air Pollution Contaminant Transport
- Environmental Management
- Hazardous Wastes/Remediation
- Natural Environmental Systems
- Risk Assessment
- Water/Wastewater

Geotechnical Engineering

- Constitutive Modeling
- Earthquake Susceptible Soils
- Expansive Soils
- Instrumentation, Health Monitoring & Assessment
- Scour

- Soil Mechanics
- Soil-Structure Interaction

Infrastructure Management & Security

- Condition Assessment
- Infrastructure Security
- Infrastructure & Transportation Asset Management
- Pavement Management
- Performance Modeling & Prediction

Materials Engineering

- Asphaltic & Concrete Pavements
- Construction Materials
- Corrosion Within Structures
- Fracture & Damage Mechanics
- Mechanical Properties & Transport in Concrete Materials
- Micromechanics & Microstructure Characterization
- Nondestructive Testing
- Pavement Evaluation
- Recycled Materials

Ocean Engineering

- Computational Fluid Dynamics
- Dynamics of Offshore Structures
- Fluid-Structure Interaction
- Mooring Systems
- Multiphase Flow
- Naval Architecture
- Nonlinear Hydrodynamics
- Ocean Wave Dynamics

Structural Engineering

- Building, Transportation & Offshore Structures
- Damage Detection
- Engineering Risk Analysis
- Fatigue & Fracture
- Preservation of Historic Structures
- Seismic & Wind Performance
- Smart Materials & Structures
- Structural Reliability
- Vibrations, Sensing & Control

Transportation Engineering

- Geometric Design
- Intelligent Transportation Systems
- Planning
- Scheduling Algorithms
- Traffic Control Devices
- Transit Systems
- Transportation Economics
- Transportation Operations
- Transportation Safety
- Transportation Systems Modeling

Water Resources Engineering

- Hydraulics
- Hydrology
- Remote Sensing
- Sustainability
- Systems Analysis
- Water Resources Planning & Management

COMPUTER SCIENCE *and* ENGINEERING

Enrollment Fall 2008

Undergraduate Computer Engineering Students	268	Graduate Students	309
Undergraduate Computer Science Students	322	Ph.D.	132
Average SAT Score	1254	Master's	159

Quality Indicators

Total Faculty	46	U.S. News & World Report Rankings	Endowed Chair Holders	1
Professors	17	Rankings Among Public Institutions	Endowed Professorship Holders	3
Associate Professors	10	Computer Engineering	National Academy of Engineering Members	1
Assistant Professors	12	Computer Science		
Non-tenured/Non-tenure Track	7			

Centers and Laboratories

Brain Networks Laboratory	Laboratory for Software Research
Center for the Study of Digital Libraries (TEES)	Parasol Laboratory
Electronic Design Automation Laboratory	Pattern Recognition and Intelligent Sensor Machines (PRISM) Laboratory
Embedded Systems and Codesign Group	Real-Time Distributed Systems
Geometry and Graphics Group	Real-Time Systems Group
High Performance Computing Laboratory	Software Process Improvement Laboratory
Human-Autonomous Robot Design and Systems (HARD Systems) Laboratory	Sketch Recognition Laboratory
Hypermedia Research Laboratory	Training Systems Science and Technology Center
Interface Ecology Laboratory	Virtual Network Engineering Laboratory
Internet Research Laboratory	

Research Areas

Core Research Areas

Foundations of Computing
 Human-Centered Systems
 Information
 Intelligent Systems and Robotics
 Software
 Software Engineering
 Systems

Multidisciplinary Systems

Bioinformatics
 Brain Networks
 Computational Science
 Humanities Informatics
 Security

ELECTRICAL *and* COMPUTER ENGINEERING

Enrollment Fall 2008

Undergraduate Electrical Engineering Students	623	Graduate Students	516
Undergraduate Computer Engineering Students	165	Ph.D.	184
Average SAT Score	1232	Master's	332

Quality Indicators

Total Faculty	72
Professors	33
Associate Professors	11
Assistant Professors	23
Non-tenured/Non-tenure Track	5

U.S. News & World Report Rankings

Rankings Among Public Institutions

Electrical Engineering	9 Undergraduate
Electrical Engineering	12 Graduate
Computer Engineering	13 Graduate

Endowed Chair Holders	6
Endowed Professorship Holders	10
National Academy of Engineering Members	2

Centers and Laboratories

Analog and Mixed-Signal Center (TEES)
 Control Engineering Laboratory
 Digital Signal Processing Laboratory
 Downed Conductor Test Facility
 Electric Machines and Power Laboratory
 Electromagnetics and Microwave Laboratory
 Electronics Laboratory
 Electro-optics Laboratory
 Fuel Cell Power Systems Laboratory
 Functional Thin Film Laboratory

Genomic Signal Processing Laboratory
 Magnetic Resonance Systems Laboratory
 Multimedia Laboratory
 Multimedia Communication and Networking Laboratory
 NanoBio Systems Laboratory
 Nanofabrication Cleanroom Facility
 Power Electronics Laboratory
 Power Electronics and Motor Drives Laboratory
 Power Engineering Laboratory
 Power Quality Laboratory

Power System Automation Laboratory
 Power System Control and Protection Laboratory
 Semiconductor Laboratory Sensing, Imaging and Communications Systems Laboratory
 Sensing, Imaging and Communication Systems Laboratory
 Smoke Detector Test Facility
 Ultrasound Imaging Laboratory
 VLSI Laboratory
 Wireless Communications Laboratory

Research Areas

Analog and Mixed Signals

- Active and Passive Filter Design
- Biomedical Applications
- Broadband Communications
- Data Converters
- High-Speed Electronic Systems
- Integrated Circuit Design
- Low-Noise Front-End Electronics
- Low-Voltage Low-Power Electronics
- Millimeter-Wave Integrated System Design
- Power Management
- RF IC and System Design

Biomedical Imaging and Genomic Signal Processing

- Bioinformatics and Computational Biology
- BioMEMs and Lab-on-a Chip
- Biosensing and Bioanalysis Systems
- Dynamic Imaging, Thermal Imaging and Magnetic Resonance Microscopy
- Genomic Signal Processing
- Image Analysis Techniques and Algorithms
- Magnetic Resonance Imaging and Spectroscopy
- Morphological Analysis
- Optical Tomographic Imaging Techniques
- Sensor Arrays in Medical Imaging
- Ultrasound and Elasticity Imaging

Computer Engineering

- Computer Networks and Internet
- Computer Systems
- Digital VLSI Design and Test
- Electronic Design Automation
- Fault Tolerance, Security and Reliability
- Mobile Wireless Networking

- Multimedia Infrastructure
- Network Coding
- Network Security and Reliability
- Storage Systems

Control Systems

- Homomorphic Digital Filtering
- Linear Multivariable Control Systems
- Nonlinear Control Systems
- Robust Control and Adaptive Control

Electric Power and Power Electronics

- Alternative Energy Systems
- Condition Monitoring and Fault Diagnostics of Electric Machines
- DSP-Based Power Electronic Systems
- Dynamic Analysis
- Electric Ship Power and Power Electronics Systems
- Electromechanical Energy Storage Systems
- Monitoring, Control and Protection
- Novel Electric Motors and Generators for Special Applications
- Power Converters for Windmills and Hybrid Vehicles
- Power Electronics and Motor Drives
- Reliability Evaluation
- Substation Automation
- Switching Power Supplies

Electromagnetics and Microwaves

- Antennas
- CMOS RFIC and Systems
- Electromagnetic Theory
- Electromagnetic Wave Propagation

- Guided-Wave Structures
- Microstrip Antennas
- Microwave Solid-state Circuits and Devices
- Microwave Systems
- Millimeter-Wave Circuits
- Sensing and Imaging
- Surface Penetrating Radar

Solid-state Electronics Photonics and Nano-Engineering

- Fiber Optics Devices
- Functional Thin Film Processing
- Integrated Optics
- Micro Electromechanical System (MEMS)
- Nanolithography
- Nanotechnology
- Noise in Electronic Systems
- Optical Communication
- Optical Filters
- Quantum Optics

Telecommunications and Signal Processing

- Advanced Channel Coding Techniques
- Data Compression
- Digital Communications Systems
- Digital Signal Processing
- Estimation and Detection Theory
- Information Security
- Information Theory
- Multirate Signal Processing
- Sensor Networks
- Time-frequency Analysis
- Wireless Networks
- Wireless Systems

ENGINEERING TECHNOLOGY *and* INDUSTRIAL DISTRIBUTION

Enrollment Fall 2008

Undergraduate Students	901	Graduate Students	18
Average SAT Score	1149	Master's (Distance Learning Program)	18

Quality Indicators

Total Faculty	42	Endowed Chair Holders	1
Professors	5	Endowed Professorship Holders	4
Associate Professors	8		
Assistant Professors	13		
Non-tenured/Non-tenure Track	17		

Centers and Laboratories

Center for Telecommunications Technology Management
 Computer-Integrated Manufacturing Laboratory
 DXP Pump Laboratory
 Embedded Systems Laboratory
 Fluid Power Laboratory
 Freescale Digital Systems Laboratory
 Local and Metropolitan Area Networks Laboratory
 Micro and Nano Manufacturing Laboratory
 Mobile Integrated Solutions Laboratory
 Monterrey Global Research Center

Non-Destructive Testing and Evaluation Laboratory
 Radiation Hardness Testing Laboratory
 Radio Frequency Identification in Distribution Laboratory
 R.C. Womack Fluid Power Laboratory
 RFID/Sensor Laboratory
 Rockwell Automation Laboratory
 Supply Chain Systems Laboratory
 Thomas and Joan Read Center for Distribution Research and Education (TEES)
 TI Mixed-Signal Test Laboratory
 Virtual Instrumentation and Measurement Systems Laboratory

Research Areas

Automation

- Automation, Robotics and System Integration
- Engineering Education and Cognition
- Hybrid Imaging and Thermal Profiling for Product/ Process Characterization
- Nanotechnology
- Smart Design Environments for Reconfigurable Manufacturing Systems

Electronics

- Control Systems
- Embedded Computer Systems
- Medical Instrumentation and Robotics
- Product Design and Prototyping
- Radiation Hardness Testing
- Real-Time Software Systems
- RFID/Sensor Integration and Networks
- Semiconductor Manufacturing Equipment Testing
- Semiconductor Device Testing
- Smart Vehicles
- Software Defined Radio
- Software Development
- Virtual Instrumentation

Industrial Distribution

- Competitive Advantage
- Customer Relationship Management
- Distribution Forecasting
- Distributor Profitability
- Distributor Information Management

- Industrial Marketing
- Industrial Sales
- Inventory Management
- Integrated Supply
- Lean Distribution
- Logistics and Transportation
- Manufacturing and Distribution Benchmarking
- Operational Excellence
- Quality
- Strategic and Global Sourcing
- Supplier Relationship Management
- Supply Chain Management
- Value Chain Analysis

Manufacturing Processes and Materials

- Advanced Materials
- Asset Management
- Design and Development of Advanced Materials Processing Technologies
- Distribution Best Practices
- Enterprise Performance Management
- K-12 Outreach
- Materials Joining
- Materials Selection and Economics
- Metallurgical Effects of Manufacturing Processes
- Micro/Nano Manufacturing
- Non-Destructive Testing and Evaluation
- Warehouse Design and Optimization

Manufacturing Systems

- Cost Modeling and Analysis
- Globalization
- Manufacturing Systems Cast Modeling and Analysis
- Manufacturing Systems Optimization
- Optimization Under Partial Information-Sharing

Structural Analysis

- Assessment of In-Situ Structural Systems Using Field Measurements

Telecommunications

- Data Communications
- Equipment Application
- Internet Telephony
- Networking
- Policy and Regulations
- Quality of Service
- Rural Communications and Telemedicine
- Transmission and Switching
- Wireless Communications

Thermal Sciences

- Electrochemistry
- Energy Conservation
- Heat Transfer
- Thermal System Design

INDUSTRIAL *and* SYSTEMS ENGINEERING

Enrollment Fall 2008

Undergraduate Students	489	Graduate Students	256
Average SAT Score	1219	Ph.D.	50
		Master's	216

Quality Indicators

Total Faculty	28	U.S. News & World Report Rankings	Endowed Chair Holder	1
Professors	10	Rankings Among Public Institutions		
Associate Professors	7	7 Undergraduate	Endowed Professorship Holders	2
Assistant Professors	7	6 Graduate		
Non-tenured/Non-tenure Track	4			

Centers and Laboratories

Advanced Metrology Laboratory	Manufacturing Automation Laboratory
Computer Integrated Manufacturing Laboratory	Modeling and Simulation Laboratory
Decision Analysis Systems Laboratory	RFID and Supply Chain Systems Laboratory Laboratory
Institute for Manufacturing Systems (TEES)	Systems Modeling and Computational Optimization (SyMCo) Laboratory
Logistics and Networked Systems Research Laboratory	Virtual Reality and Visualization Laboratory

Research Areas

Communications Systems

- Network Design and Configuration
- Survivability and Quality of Service Modeling
- Teletraffic Engineering

Enterprise Systems

- Capacity Planning
- Disruption Management
- Enterprise Risk Profiling

Homeland Security

- Robotics Applications to Search and Rescue
- Sensor Surveillance System Design
- Situational Awareness Modeling
- Test and Evaluation of First Responder Equipment
- Visualization and Virtual Environments

Human/Systems Interface

- Cognition
- Human/Computer Interaction
- Knowledge Acquisition
- Virtual Environments

Logistics and Supply Chain Management

- Closed Loop Supply Chain
- Coordination of Inventory, Scheduling and Transportation
- Multi-Commodity Flow Distribution Network Design
- Radio Frequency Identification
- Supply Chain Risk and Uncertainty
- Vendor Managed Inventory
- Warehousing, Transportation and Supply Contracting

Management and Decision Analysis

- Decision Making Under Uncertainty
- Engineering and Project Management
- Individual and Corporate Risk Preference and Analysis
- Modeling of Probabilistic Dependence
- Probability Assessment
- Teams

Modeling and Analysis of Biological Systems

- Forest Biomass Utilization
- Forest Fire Spread Modeling
- Population Modeling for Pest Management Control

Modeling and Analysis of Probabilistic Systems

- Air Traffic Scheduling
- Control within Fabrication Facilities
- Maintenance Science
- Optimal Replacement Analysis
- Queueing and Fluid-Flow Modeling

Modeling and Analysis of Production and Manufacturing

- Cost Modeling of Process Equipment and Facilities
- Electronics Manufacturing, Assembly, Packaging and Testing
- Facility Design
- Fast Hybrid Analytical Modeling/Simulation Capabilities
- Flow and Queue Analysis of Wafer Fabrication
- Lean Manufacturing Practices
- Material Handling
- Production Planning and Control

Modeling and Analysis of Service Systems

- Healthcare Delivery Systems
- Healthcare Treatment Planning
- Revenue Management
- Workforce Agility

Optimization

- Biological Systems (Bioinformatics)
- Graph Theory
- Intelligent Heuristics
- Linear, Nonlinear and Integer Programming
- Stochastic Optimization

Quality and Reliability Engineering

- Analysis and Design of Distributed Sensor Systems
- Data-Mining Methods
- Multivariate Analysis Methods for Process Monitoring, Diagnostics and Control
- Systems Reliability and Maintainability

MECHANICAL ENGINEERING

Enrollment Fall 2008

Undergraduate Students	1,080	Graduate Students	502
Average SAT Score	1257	Ph.D.	189
		Master's	313

Quality Indicators

Total Faculty	67	U.S. News & World Report Rankings Rankings Among Public Institutions	Endowed Chair Holders	4
Professors	25		Endowed Professorship Holders	9
Associate Professors	14	9 Undergraduate 10 Graduate	National Academy of Engineering Members	1
Assistant Professors	15			
Non-tenured/Non-tenure Track	13			

Centers and Laboratories

Advanced Engine Laboratory	Equal Channel Angular Extrusion Laboratory	Polymer Processing Laboratory
Aerosol Technology Laboratory	Experimental Mechanics Laboratory	Polymer Research Laboratory
Boiler Burner and Re-burn Laboratory	Fiber Performance Laboratory	Polymer Technology Center (TEES)
Buoyancy Mixture Laboratory	Fluid Mechanics Laboratory	Product Synthesis and Modeling Design Laboratory (ProSyn)
Center for Dynamic Systems and Control (TEES)	Fluid Mechanics/Combustion Laboratory	Renewable Energy Laboratory
Coal and Biomass Combustion Laboratory	FTIR Spectrometer Laboratory	RJR/Combustion Laboratory
Computational Fluids and Heat Transfer Laboratory	Fuel Utilization Laboratory	Robotics Laboratory
Computational Heat Transfer Laboratory	Industrial Assessment Center	Rotordynamics/Vibration Laboratory
Computational Mechanics Laboratory	Innovation, Design Reasoning, Engineering Education and Methods Laboratory (D-DREEM)	Rotordynamics Laboratory
Computer Laboratory	Innovative Impinging Jets Laboratory	Turbine Heat Transfer Laboratory
Conduction Heat Transfer Laboratory	Laminar Flow Reactor Laboratory	Turbine Performance and Flow Research Laboratory
Convection Heat Transfer Laboratory	Laser Diagnostics Laboratory	Turbomachinery Laboratory (TEES)
Design Center	Mechanics/Advanced Materials Laboratory	Two-Phase Heat Transfer Laboratory
Electrohydrodynamics Laboratory	Nano Energy Laboratory	
Energy Systems Laboratory (TEES)		

Research Areas

Combustion and Fuels

- Aerosol Measurements
- Alternative and Biofuels
- Coal, Biomass and Animal Waste Combustion
- Energy Engine Emission
- Fuel Cells
- Gasification
- Internal Combustion Engine Performance
- Pollutants Formation (NOx, Hg) and Control
- Thermodynamics and Energy Analysis of Engines

Computational Mechanics

- Fluid Mechanics (Aerosols, Gas Dynamics)
- Heat Transfer
- Solid Mechanics

Energy Systems

- Air-Conditioner Performance Evaluations
- Alternate Refrigerants
- Building Energy Monitoring and Analysis
- Defrost Cycle Improvements
- Energy Analysis and Diagnostic Center (EADC)
- Ground Coupled Heat Pumps
- Heat and Mass Transfer in Attic Systems
- Industrial Energy Assessment
- Industrial Energy Efficiency Improvements
- Infiltration Effect on Energy Use in Buildings
- Solar Ponds
- Thermal Energy Storage Evaluations

Fluid Mechanics

- Aerodynamic Analog Laboratory
- Aerosol Technology Laboratory
- Computational Fluid Mechanics
- Laser Anemometry Laboratory
- Tribology Laboratory

Heat Transfer

- Boiling/Condensation
- Computational Fluids and Combustion
- Conduction Heat Transfer
- Heat and Mass Transfer
- Interferometry
- Turbine Heat Transfer
- Two-phase Heat Transfer

Innovation and Design

- Cad/Computer Related Issues
- Cost Information Tools for Designers
- Design for Manufacturability
- Design Methodology/Cognition Issues

Materials And Mechanics

- Advanced High Temperature Ceramics
- Advanced Multifunctional Composites
- Corrosion of Coated Systems
- Cryogenic Engineering and Applied Superconductivity
- Elastic Properties in Advanced Materials

- Friction and Wear of Materials
- Multilayer Thin Films and Nanomechanics
- Self-Assembled Monolayers
- Severe Plastic Deformation
- Structural and Functional Materials
- Superplasticity and Advanced Machining Techniques
- Thermodynamics and Phase Stability
- Transformational Materials

Mechanical Systems and Controls

- Controls
- Manufacturing
- Robotics
- Vehicle Dynamics
- Vibrations

Polymer Science and Engineering

- Engineering Properties of Polymers and Polymeric Composites
- Materials Synthesis
- Polymer Nanocomposites
- Polymer Processing

Turbomachinery

- Computational Fluid Mechanics
- Heat Transfer
- Performance Research
- Rotordynamics

NUCLEAR ENGINEERING

Enrollment Fall 2008

Undergraduate Students	253	Graduate Students	99
Average SAT Score	1291	Ph.D.	32
		Master's	67

Quality Indicators

Total Faculty	20	U.S. News & World Report Rankings	
Professors	8	Rankings Among Public Institutions	
Associate Professors	4	2 Undergraduate	
Assistant Professors	5	2 Graduate	
Non-tenured/Non-tenure Track	3		

Centers and Laboratories

Accelerator Laboratory	Micro-Beam Cell Irradiation Facility
AGN-201M Nuclear Reactor Laboratory	NASA Space Power Center (TEES)
Center for Large-scale Scientific Simulations	Nuclear Heat Transfer Systems Laboratory
Fuel Cycle and Materials Laboratory	Nuclear Power Institute (TEES)
Institute for National Security, Education and Research (INSER)	Nuclear Science Center (1MW Triga Reactor) (TEES)
Interphase Transport Phenomena Laboratory	Nuclear Security Science and Policy Institute
Laser Diagnostics Multiphase Flow Laboratory	Radiation Detection Measurement Laboratory
	Tandem Accelerator Laboratory

Research Areas

Adaptive Simulations	Flow Visualization	Nuclear Material Safeguards
Advanced Fuel Cycles and Nuclear Waste Management	Fuel Cycle Process Development	Optimization Methods for Nuclear Energy Systems
Advanced Reactor Design and Analysis	Fuel Cycles	Particle Transport
Aerosols	Fuel Cycles Analysis	Public Information
Aerosol and Particle Application Approaches in Radiation Safety Technology	Fuel Materials Research	Radiation and Cancer Biology
Aerosol Measurement Methodology and Analysis	Heat Pipe Behavior	Radiation Detection and Measurement
Aging Effect in Nuclear Systems	High-Fidelity Systems Analysis	Radiation Dosimetry
Applications of Radionuclides	High-Performance Computing	Radiation Effects
Applied Computational Physics	High-Temperature Gas-Cooled Reactor Technology	Radiation Transport
Atmospheric Aerosols and Air Chemistry	Internal Dosimetry	Radiological Dose and Risk Assessment
Behavior of Nuclear Fuels	Ion-Beam Solid Interactions	Reactor Experimentation
Computational and Experimental Fluid Mechanics and Heat Transfer	Ion Implantation	Reactor Physics
Development and Analysis of Computational Methods	Ionizing Radiation Bio-effects	Reactor Safety
Direct Energy Conversion Methods and Applications	Materials Research for Nuclear Systems	Rutherford Backscattering and Channeling Analysis
Disposition of Weapons-Plutonium	Material Substitution	Space Power Systems
Dose Assessment from Non-Uniform Exposures	Medical Applications for Radionuclides	Thermal Hydraulics
Elastic Recoil Detection Analysis	Micro-Dosimetry	Thermoluminescent Dosimetry
Environmental Sciences	Molecular Clusters and Small Particles	Transmutation Doping
Exposure Assessment Strategies	Multiphase Flow	Two-Phase Flow in Micro-Gravity
External Dosimetry	Multiphysics Computation and Simulation	Waste Form Development
Fast Reactor Technology	Nanoscale Technology	
	Non-Proliferation Strategies	
	Nuclear Instrumentation	

Harold Vance Department of
PETROLEUM ENGINEERING

Enrollment Fall 2008

Undergraduate Students	592	Graduate Students	254
Average SAT Score	1260	Ph.D.	71
		Master's	183

Quality Indicators

Total Faculty	30	U.S. News & World Report Rankings	Endowed Chair Holders	7
Professors	13	Rankings Among Public Institutions	Endowed Professorship Holders	3
Associate Professors	4	1 Undergraduate	National Academy	
Assistant Professors	4	2 Graduate	of Engineering Members	3
Non-tenured/Non-tenure Track	9			

Centers and Laboratories

Acid Stimulation Laboratory	High-Pressure/High-Temperature Fluid Property Measurement Laboratory	Productivity Enhancement Laboratory
Crisman Institute for Petroleum Research	Integrated Reservoir Investigations Laboratory	Ramey Thermal Recovery Laboratory
Engineering Imaging Laboratory	Mobil Undergraduate Teaching Laboratory for Core Analysis	Rheology of Non-Newtonian Fluids
Evaluation of Oilfield Chemicals Laboratory	Model Calibration and Efficient Reservoir Imaging (MCERI)	Riverside Field-Scale Production Test Facility
Fracture Conductivity Laboratory	Oilfield Brine Processing Laboratory	Rock Mechanics Laboratory
Gas Hydrates Laboratory		Texaco Drilling Fluids Laboratory
Global Petroleum Research Institute (TEES)		Tommie E. Lohman Fluid Measurement Laboratory

Research Areas

Crisman Institute for Petroleum Research

Center for Energy, Environment, and Transportation Innovation

- Energy
- Environmental and Water Issues
- Transportation Innovation

ChevronTexaco Center for Well Construction and Production

- Advanced Drilling Technology
- Advanced Production Technology
- Deep Gas Well Construction
- Well Construction
- Well Stimulation

Halliburton Center for Unconventional Resources

- Coalbed-Methane Reservoirs
- Heavy Oil Recovery
- Natural Gas Hydrate Reservoirs
- Resource Assessments and Uncertainty
- Shale Gas
- Tight Gas

Schlumberger Center for Reservoir Description and Dynamics

- Analysis of Reservoir Performance
- Enhanced Recovery
- Formation Evaluation
- Naturally Fractured Reservoirs
- Reservoir Simulation
- Reservoir Visualization