The University of Texas at Arlington

ELECTRICAL ENGINEERING

GRADUATE PROGRAM

Advising Office
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Graduate Catalog at http://www.uta.edu/gradcatalog/ee

Information for New or Prospective Students

This document has been prepared to assist the new or prospective student in acquiring an understanding of the graduate program in Electrical Engineering offered at The University of Texas at Arlington. Answers to often-asked questions are provided, but it serves only as a supplement to the UTA Graduate Catalog.

The Catalog is the authoritative source of university information. You should become familiar with it and consult it for answers to questions regarding policies, regulations, and course descriptions. Information of special interest to EE students will be posted outside the Advising Office (Room 501). Any questions should be directed to Dr. Davis or the staff of the EE Advising Office.

Revised April 3, 2009

The University, College, and Department

The University of Texas at Arlington is situated in the center of the Dallas/Fort Worth Metroplex, the heart of the North Texas technology region. The university, a component of the University of Texas System, has nearly 25,000 students enrolled in 52 Bachelor Degree programs, 74 Master Degree programs, and 34 Ph.D. Degree programs. It is the sixth largest university in Texas. The College of Engineering, with approximately 4,000 students, is the third largest in Texas. The college presently has approximately 100 faculty members. The goals of the college are to provide quality engineering education at both the undergraduate and graduate levels and to provide a research and educational resource especially to technology-based enterprises in North Texas. UTA is emerging as a major research institution. The Department of Electrical Engineering has laboratories, offices and classrooms in the College of Engineering. Research facilities of the Department of Electrical Engineering are included in the following institutes, research centers, and laboratories: The Automation and Robotics Research Institute; Human Performance Institute; ElectroOptics Research Center; Energy Systems Research Center; National Science Foundation Center for Electronic Materials, Devices and Systems; Wave Scattering Research Center; and the Digital Image Processing; Image Processing and Neural Networks; Magnetic Resonance Imaging, and Systems; Controls and Manufacturing Laboratories. Current externally funded research programs in the EE Department amount to nearly $2 million per year. The EE Department has undergone many changes in the areas of instruction and research since the first class of 14 students graduated in 1961, and it is now one of the largest in the state. There are over 80 graduating seniors and 170 advanced degrees awarded in the EE Department every year. The department goals for the future are to provide the very best possible education in electrical engineering allowing the graduate to choose from a large variety of career options. We maintain very important relationships with industry which include co-op programs, adjunct lecturers, and research programs. Every attempt is made to keep our program relevant to the technical needs and challenges of the future. The Electrical Engineering Graduate Program is managed by the Graduate Advisors, Dr. Alan Davis and Dr. Kai Yeung, assisted by the Advising Office Staff. Students seeking consultation should contact the Advising Office for more information regarding advisor schedules. The EE Advising Office hours are Monday - Friday 8 AM to 12 Noon and 1 PM to 5 PM.

Financial Aid

Graduate Research and Teaching Assistantships (GRA/GTA) are awarded on a competitive basis. The GTA or GRA cannot be awarded to probationary or provisional students. In addition, GTAs are not usually awarded the first semester. Graduate Research Assistantships are awarded at the discretion of individual faculty members and are subject to available funding. They are very competitive and are typically obtained by contacting the professor once you are on campus, enrolled as a full-time graduate student. If you are interested in other types of financial aid, you may contact:
The University of Texas at Arlington, Financial Aid Office, Box 19199, Arlington, TX 76019.

Admission Criteria

The admission process considers all of the application material including official transcripts, GRE scores, letters of recommendation and the statement of purpose. No single objective factor is used to finalize the decision for admission or to deny admission. An attempt will be made to match the technical aspirations of the potential graduate students with the departmental resources in order to provide a stimulating academic environment for the students and their graduate education.

Admission decisions will be based on the following criteria:

1. Admission with Unconditional status: A typical applicant who is admitted into the graduate program will have met the following admission requirements.
   - The minimum undergraduate GPA requirement
     - For MSEE admission 3.25 (on a 4.0 scale) based on upper division course work (junior and senior level or equivalent)
     - For Ph.D. admission 3.5 based on MSEE or equivalent
   - Relevance of the students undergraduate degree (background) to the EE curriculum.
   - Rigor of the students Bachelors degree.
   - Reputation of the University/College that the student has received his/her previous degrees

- For Ph.D. applicants, the publications in scholarly conferences/journals are optional, but will improve both a students chances of securing admission and receiving financial support.
- Three recommendation letters from individuals who can judge the probability of success of the students graduate study.
- GRE scores of at least the following
  a. Quantitative score
     ≥ 720 for MS or ≥ 750 for Ph.D.
  b. Verbal score ≥ 500
  c. Analytical Writing ≥ 4
- For an International Student, an additional requirement beyond those stated above:
  TOEFL $\geq$ 560 for the paper and pencil test, 220 for the computer-based test, and 79 for the Internet-based test.

2. *Admission with Provisional status:* An applicant unable to supply all required official documentation prior to the admission deadline, but whose available documentation otherwise appears to meet admission requirements may be granted provisional admission.
3. *Deferred status:* A deferred decision may be granted when a file is incomplete.
4. *Denied status:* An applicant that does not meet categories 1, 2, or 3 above will be denied admission.
5. *Fellowships:* Award of a fellowship will be based on the criteria required by the sponsor agency (including the graduate school) on a competitive basis.

Requirements for the Master of Science in Electrical Engineering

General Requirements Applicable to Thesis, Thesis Substitute, and Non − Thesis Degrees

1. Each degree plan must have courses in at least three different areas of specialization, called Technical Areas. EE has nine such areas. Please see the catalog to determine the Technical Area to which a course is assigned.

1. Digital and Microprocessor/Controller Systems:

   Digital Signal Processors, Embedded Microcontrollers, Microprocessors, Advanced Microprocessor Systems.

2. Solid-State Devices, Circuits and Systems:

   Semiconductor Theory, Microwave Devices and Circuits, Analog Electronics.

3. Systems, Controls and Automated Manufacturing:

   Systems, Controls, Manufacturing, Discrete Event Control, Neural and Fuzzy Control, Nonlinear Modern Control, Biomedical Signal Processing and Instrumentation

4. Electromagnetic Fields and Applications:

   Remote Sensing, Electromagnetic Fields, Propagation, Scattering, Radiation, and Microwave Systems.

5. Digital Signal and Image Processing:

   Vision Systems, Neural Networks, Statistical Signal Processing, Nonlinear Image Processing, Virtual Prototyping, and Virtual Environments.

6. Communications:

   Information Transmission and Communication Systems.

7. Power Systems:and Industrial Power Electronics:

   Efficient Operation, Generation, Transmission, Distribution, Deregulation; Power Electronics Engineering.

8. Optical Devices and Systems:

   Optics Electro-optics, Diffractive Optics, Nonlinear Optics, and Lasers.

9. Nanotechnology and MEMS Materials and Devices

Quantum Electronic Devices, Semiconductor Surfaces and Interfaces, Single Electron Devices, Sensors and Detectors, Carbon Nanotube Devices, Noise and Reliability in Nanoelectronic Devices, Micro-actuators, RF MEMS, Polymer Electronics, and Nanophotonics.

10. Renewable Energy Systems and Vehicular Technology:

2. The maximum combined number of transfer and non-UTA Electrical Engineering credits is nine (9) hours. Only graduate level courses in Engineering, Math, and Physics may be used. The grade earned must be a B or higher. Courses taken outside the EE department are considered as a single Technical Area (of the three Technical Areas required for the MSEE degree). 3. The EE course work GPA must be 3.0 or greater. The overall graduate GPA must be 3.0 or greater.

Thesis Degree Requirements

1. Minimum total degree requirement: 30 hours (minimum 24 course hours plus EE 5698).
2. The student must orally defend the thesis before the Supervising Committee. The defense is documented as the Final Master's Examination. The Supervising Committee will consist of three faculty, one of whom may be outside the EE Department.
3. EE 5391 (Advanced Study in EE) may not be used on a thesis degree plan.

Thesis Substitute Degree Requirements

1. Minimum total degree requirement: 33 hours (30 course hours plus EE 5392).
2. The student must present the project results to the EE Faculty. The project presentation is documented as the Final Masters Examination. A minimum of three faculty must serve as project examiners.
3. EE 5391 (Advanced Study in EE) may not be used on a thesis-substitute degree plan.

Non – Thesis Degree Requirements

1. Minimum degree requirement: 36 course hours
2. Fulfillment of the requirement of the Final Master's Exam in Electrical Engineering for MSEE non-thesis degree candidates:

· The purpose of the Master's Final Exam is to demonstrate a comprehensive knowledge of at least three of the major areas of study in Electrical Engineering.

· This will be demonstrated by earning a GPA of 3.3 or better in three Technical Proficiency Courses or their equivalents (one each from at least three areas). The examination committee of record will consist of the Graduate Advisor (chairman), Graduate Studies Committee Chairman, and Associate Chairman of the EE Department.

3. EE 5391 (Advanced Study in EE) may be used once on a non-thesis degree plan.

Due to similarities of content, only one from each of the following combination of courses may be included on the degree plan:

EE Course	Outside Course	Outside Course
EE 5311	CSE 5350	
EE 5314	CSE 5442	
EE 5323	AE 5337	ME 5374
EE 5351	CSE 5366	
EE 5356	CSE 6366	
EE 5360	CSE 5344	

Technical Areas, Courses, and Technical Proficiency Courses

MSEE students must take courses from three Technical Areas. Non-thesis students must take one technical proficiency course from each of three areas, and earn at least a 3.3 GPA in those three courses.

Technical Area	**Courses**	**Technical Proficiency Courses**
1. Digital and Microprocessor/ Controller Systems	EE 5313 EE 5314 EE 5315 EE 6313 EE 6314	EE 5313 - Microprocessor Systems Approved Substitution: EE
2. Solid State Devices and Systems	EE 5305 EE 5310 EE 5311 EE 5312 EE 5316 EE 5317 EE 5318 EE 5340 EE 5341 EE 5342 EE 5345 EE 5346 EE 5347 EE 5348 EE 6318 EE 6341	EE 5305 - Advanced Electronics EE 5310 - Digital VLSI Design EE 5340 - Semiconductor Device Theory EE 5341 - Fundamental for Semiconductor Devices Approved Substitution: EE
3. Systems, Controls and Automated Manufacturing	EE 5304 EE 5307 EE 5320 EE 5321 EE 5322 EE 5323 EE 5324 EE 5325 EE 5326 EE 5327 EE 5328	EE 5307 - Linear Control Sys. Theory EE 5320 Control Systems Design EE 5328 - Instrumentation and Measurement Approved Substitution: EE
4. Electromagnetic Fields and Applications	EE 5306 EE 5331 EE 5332 EE 5333 EE 5334 EE 5335 EE 5336 EE 5337	EE 5306 Electromagnetic Theory EE 5331 Microwave Systems Engineering Approved Substitution: EE
5. Digital Signal and Image Processing	EE 5302 EE 5350 EE 5351 EE 5352 EE 5353 EE 5354 EE 5355 EE 5356 EE 5357 EE 5358 EE 6356	EE 5302 - Random Signals and Noise EE 5350 - Digital Signal Processing EE 5356 - Digital Image Processing Approved Substitution: EE

Technical Area	**Courses**	**Technical Proficiency Courses**
6. Communications	EE 5360 EE 5361 EE 5362 EE 5363 EE 5364 EE 5366 EE 5367 EE 5368 EE 6362 EE 6363 EE 6364 EE 6367 EE 6368	EE 5360 - Data Communication Engineering EE 5362 - Digital Communications Approved Substitution: EE
7. Power Systems and Industrial Power Electronics	EE 5308 EE 5371 EE 5372 EE 5373 EE 5374 EE 5375 EE 5376 EE 5377 EE 5378 EE 6372	EE 5308 - Power System Modeling and Analysis EE 5371 - Power System Transmission 1 Approved Substitution: EE
8. Optical Devices and Systems	EE 5365 EE 5380 EE 5382 EE 5383 EE 5384 EE 5385 EE 5386 EE 5387 EE 5388 EE 6343 EE 6365	EE 5380 - Principals of Photonics and Optical Engineering EE 5386 - Integrated Optics Approved Substitution: EE
9. Nanotechnology and MEMS - Materials and Devices	EE 5343 EE 5344 EE 5381 EE 6342 EE 6344 EE 6345	EE 5343 - Silicon IC Fab. Technology EE 5344 - Introduction to MEMS EE 5381 - Foundations in Semiconductors Approved Substitution: EE
10. Renewable Energy Systems and Vehicular Technology	EE 6375 EE 5309 EE 5309 EE 5309 EE 5309	 (Hybrid Electric Vehicle) - Not TPC (Renewable Sources) - Not TPC (Electric Motor Drives) - Not TPC (Power Electronics) - Not TPC

Requirements for the Ph.D. in Electrical Engineering

The Ph.D. is a degree with emphasis on research. Requirements for the doctoral degree are described in detail in the UTA Graduate Catalog section on Degree Offerings/Requirements. Permission to continue beyond the master's degree will be based on the grade point average and GRE scores as described above. Approval to continue in the doctoral program is given by satisfactory completion of the following procedure:

1) Obtaining the approval of a dissertation adviser, and
2) Passing the Diagnostic Examination. This exam will be over three of the diagnostic exam courses listed below.

The Diagnostic Exam must be completed within the first 18 hours of coursework toward the Ph.D. A student not having attempted the Diagnostic Examination by this time will be allowed one more opportunity to take the examination during the next full semester. If the student enrolls in Technical Proficiency Courses in order to take the Diagnostic Exam, these hours will be in addition to the required advanced level course specified later. The courses used for the diagnostic exam are listed below.

EE 5302 - Random Signals and Noise	EE 5340 - Semiconductor Device Theory
EE 5305 - Advanced Electronics	EE 5344, 5381 - Intro. MEMS
EE 5306 - Electromagnetic Theory	EE 5350 - Digital Signal Processing
EE 5307 - Linear Systems Engineering	EE 5362 - Digital Communications
EE 5308 - Power System Modeling and Analysis	EE 5380 - Principles of Photonics
EE 6375 - Power Electronics Engr.	

The program of work is expected to include a **minimum** of 18 semester hours of advanced graduate level coursework beyond the master's degree and sufficient dissertation semester hours as required to complete the dissertation. These courses may not include any of the above diagnostic exam courses nor may they include EE 5301, EE 5303, EE 5313, and EE 5361. These courses may include graduate level mathematics, science, or engineering relevant to the student's dissertation research program, but only with approval of the graduate advisor.

Status as a doctoral candidate is assigned for students who have passed an oral Comprehensive Examination (a comprehensive dissertation proposal) and submitted a Final Program of Work. The comprehensive Examination will be required by the time the student has completed the required course work. If the student fails the examination, he may be given one more chance to pass it no later than during the following semester. Upon completion of the Comprehensive Examination, the candidate should enroll in the dissertation course (EE 6399, EE 6699, or EE 6999) continuously until defense of the dissertation. The last semester the student must be enrolled in EE 6999. This ordinarily requires approximately 30 semester hours of dissertation credit.

Continuation

The Electrical Engineering Graduate Program, in fulfillment of its responsibility to graduate highly qualified engineers, has established certain policies and procedures. In addition to the requirements of the Graduate School listed elsewhere, to continue in the program each MSEE student must maintain at least a B (3.0) GPA in all electrical engineering coursework and at least a B (3.0) GPA in all coursework A student working toward a Ph.D. must maintain a 3.5 GPA in all electrical engineering coursework and at least a 3.5 GPA in all coursework. The grade of R (research in progress) is a permanent grade; it cannot be changed by completing course requirements in a later semester. To receive credit for an R-graded course, the student must continue to enroll in the course until a passing grade is received.

An incomplete grade (the grade of X) cannot be given in a course that is graded R, nor can the grade of R be given in a course that is graded X. To receive credit for a course in which the student earned an X, the student must complete the course requirements. A grade of X cannot be changed by enrolling again in the same course. At the discretion of the instructor, a final grade can be assigned through a change of grade form.

Three-hour thesis courses and three- and six-hour research and dissertation courses are graded R/F/W only. The grade of P (required for degree completion for students enrolled in thesis or dissertation programs) can be earned only in six-hour thesis courses and nine-hour dissertation courses.

Undergraduate Requirements to Qualify with a Non – BSEE for the EE Graduate Program

The purpose of this qualifying procedure is to prepare a student holding a BS degree in a field closely related to Electrical Engineering to a level commensurate with the BSEE in order to enter the EE Graduate program. This can apply to students with the BS in other engineering programs, Engineering Physics, and possibly other science majors. These requirements go beyond fulfilling the prerequisite for desired graduate courses and are intended to qualify the student with a broad background in the undergraduate EE curriculum.

A student may qualify for entering the MSEE program from a background other than the BSEE by taking a sequence of courses approved by the Graduate Advisor. The following standards apply:

1. A grade of B or better must be received in each course taken. The overall GPA for all classes taken must be 3.25 or better.
2. A course may be waived by scoring in the upper 30% of the class in the final (comprehensive) exam for the course.
3. A course may be waived by establishing that a grade of B or better has been obtained in equivalent course or courses.
4. A course may be waived by earning a grade of B or better in a closely related EE graduate level course.

A student from a background other than the BSEE should show competence in the following 13 course areas. A student with a BS in another engineering discipline can usually qualify by taking from 4 to 10 of these courses. A student from a science background may need to take the majority of these courses.

1. EE 2347 Computer Methods for Electrical Engineering
2. EE 2307 Electromagnetics I
3. EE 2315 Circuit Analysis I
4. EE 2446 Circuit Analysis II
5. EE 3302 Fundamentals of Power Systems
6. EE 3308 Electromagnetics II
7. EE 3310 Microprocessors
8. EE 3317 Linear Systems
9. EE 3330 Probability and Random Signals
10. EE 3341 Digital Circuit Design
11. EE 3444 Electronics II
12. EE 4314 Control Systems
13. EE 4330 Fundamentals of Telecommunication Systems

Degreed Undergraduate (DUG) Enrollment Guidelines

Applicants to the Master's program may be allowed to take undergraduate electrical engineering courses as a Degreed Undergraduate if application to the UTA Graduate Program in Electrical Engineering has been made and if the Electrical Engineering Advising Office has been provided with the following information:

1. A copy of all transcripts for the junior and senior years of course work.
2. A letter of intent indicating the reason for enrolling in courses as a Degreed Undergraduate.

The student must be in one of the following three categories:

1. Have a GPA that is too low to allow admission into the Graduate Program and wish to take junior or senior EE courses to raise the GPA.
2. Have a degree in physics or another branch of engineering (NOT engineering technology) and need to take required undergraduate electrical engineering courses to meet the background requirements necessary for admission to the Electrical Engineering Graduate Program.
3. Be admissible to the Graduate Program but have missed the application deadline for the semester in which enrollment is desired. The student could then be allowed to take courses for one semester in order to complete the application procedure.

No student will be allowed to take Graduate courses to be used toward a graduate degree as a Degreed Undergraduate unless she/he has acceptable GRE scores and an undergraduate Grade Point Average 3.25 or above for the junior and senior years.

Degreed Undergraduates will be allowed to take courses only as long as they are making reasonable progress toward their goals as listed above. Therefore, students who make grades below B in such courses may be denied further enrollment. A cumulative GPA of 3.25 must be maintained for all Degreed Undergraduate courses taken.

Required Course Load for Graduate Teaching Assistants/Associates and Graduate Research Assistants/Associates

1. During the fall and spring semesters, all students enrolled in the master's program in Electrical Engineering who are employed in the Electrical Engineering Department as Graduate Teaching Assistants or Graduate Research Assistants are required to enroll in 9 semester hours. At least 6 semester hours are required in the summer semester.
2. MSEE students who serve as GTAs must be enrolled in the Thesis option.
3. During the fall and spring semesters, all students enrolled in the doctoral program in Electrical Engineering (with a master's degree completed) who are employed in the Electrical Engineering Department as Graduate Teaching Assistants or Graduate Research Assistants are required to enroll in at least 9 semester hours. At least 6 semester hours are required in the summer semester. 4.Doctoral students who have passed the Diagnostic Exam are eligible to enroll for dissertation credit. Once a student has enrolled in the dissertation course, continuous enrollment is required each fall and spring semester. Enrollment in EE 6999 is required in the graduating semester.

The Electrical Engineering Faculty and Major Research Interests

Digital and Microprocessor/Embedded Controller Systems

Daniel Engels, Babak Fahimi, George V. Kondraske, Wei-Jen Lee,

Solid State Devices : Circuits & Systems

Ronald L. Carter, Zeynep Celik-Butler, Jung-Chih Chiao, W. Alan Davis, Sungyong Jung, Howard Russell

Systems, Controls, and Automated Manufacturing

George V. Kondraske, Frank L. Lewis, Qilian Liang, Dan Popa, Harry Stephanou, Kai-Shing Yeung

Electromagnetic Fields and Applications

Kambiz Alavi, Jonathan W. Bredow, Mingyu Lu, Saibun Tjuatja, Michael Vasilyev

Digital Signal and Image Processing

Venkat Devarajan, Michael T. Manry, Soontorn Oraintara, K. R. Rao, Zhou Wang

Communications

Jonathan W. Bredow, R. Stephen Gibbs, Qilian Liang, Soontorn Oraintara, Saibun Tjuatja,

Power Systems and Industrial Power Electronics

William E. Dillon, Babak Fahimi, Rasool Kenarangui, Wei-Jen Lee, Raymond R. Shoults

Optical Devices and Systems

Kambiz Alavi, Donald P. Butler, Jung-Chih Chiao, Nikolai Stelmakh, Michael Vasilyev, Weidong Zhou

Nanotechnology and MEMS : Materials & Devices

Kambiz Alavi, Donald P. Butler, Zeynep Celik-Butler, Jung-Chih Chiao, Frank L. Lewis, Dan Popa, Harry Stephanou, Meng Tao, Weidong Zhou, Samir Iqbal

Electrical Engineering Faculty

KAMBIZ ALAVI, Ph.D., MIT, 1981. (817-272-5633) Molecular Beam Epitaxy (MBE) of compound semiconductors, physics and applications of heterostructures, multiple quantum wells and superlattices for optoelectronic and electronic devices, magneto-optics; nonlinear optics. alavi@uta.edu

JONATHAN W. BREDOW, Ph.D., Kansas, 1989. (817-272-3497) Remote sensing, radar, microwave circuits, antennas, electromagnetics, digital signal processing, digital systems. jbredow@uta.edu

DONALD P. BUTLER, Ph.D., Rochester, 1986. (817-272-1305) Microelectromechanical devices, micromachined uncooled infrared detectors, semiconductor and superconductor devices and materials, thin film deposition. dbutler@uta.edu

RONALD L. CARTER, Ph.D., Michigan St., 1971. (817-272-3466) Development of device models for use in computer-aided design of integrated circuits, simulation and characterization of solid state devices, silicon

and heterojunction bipolar transistors, step-recovery and PIN diodes, electronics manufacturing, statistical process control and quality management. ronc@uta.edu

ZEYNEP CELIK-BUTLER, Ph.D., Rochester, 1987. (817-272-1309) Measurements, analysis and modeling of noise in advanced electronic devices, semiconductor device reliability, microelectromechanical systems (MEMS), infrared microsensors, electronic devices on flexible substrates, nanoelectronic transport, superconducting devices. zbutler@uta.edu

SAMIR IQBAL, PH.D, Nanotechnology and MEMS. Biosensors and Bio-Inspired Fabrication.

JUNG-CHIH CHIAO, Ph.D. Caltech, 1995. (817-272-1337) MEMS (microelectromechanical system) RF and optical devices (RF MEMS and MOEM), nanofabrication and applications, wavelength-division-multiplexing (WDM) optical components and networking, monolithic microwave/millimeterwave integrated-circuit (MMIC) components and antennas, and quasi-optical systems and sensors. jcchiao@uta.edu

W. ALAN DAVIS, Ph.D., Michigan, 1971. (817-272-3495) Microwave and RF circuit component design, microwave semiconductor device modeling. adavis@uta.edu

WILLIAM E. DILLON, Ph.D., UTA, 1972. (817-272-5720) Power electronics; space power applications; high voltage techniques; conventional power system analysis; computer simulation of electrical components and systems. dillon@uta.edu

DANIEL ENGELS, Ph.D., MIT, 2000. (817-272-1058) Radio frequency identification systems and applications, wireless mobile, ad hoc and sensor networks, advanced identification and sensing technologies applied to health care, and embedded systems. dengels@uta.edu

BABAK FAHIMI, Ph.D., Texas A&M, 1999. (817-272-2667) Power electronics, digital control of drivers, microscopic energy conversion. fahimi@uta.edu

R. STEPHEN GIBBS, Ph.D. UT/Dallas, 2003. (817-272-3470) Digital and analog communications and systems, sgibbs@uta.edu.

SUNGYONG JUNG, Ph.D., Georgia Tech, 2002.(817-272-1338) Analog and mixed signal integrated circuit design, high-speed transceiver circuit design for telecommunication, systems-on-chip implementation, modeling of high speed circuit parasitics, digital signal processing. jung@uta.edu

RASOOL KENARANGUI, Ph.D., Iowa State, 1980. (817-272-3423) Power systems analysis and operation. kenarang@uta.edu

GEORGE V. KONDRASKE, Ph.D., UTA and UTSWMC, 1982. (817-272-3473) General systems performance theory; human performance modeling and measurement; task characterization; performance-related issues associated with any type of system; cybernetics; virtual reality; sensor development; and microprocessor-based instrumentation. kondraske@uta.edu

WEI-JEN LEE, Ph.D., UTA, 1985. (817-272-5046) Power system transient stability analysis; power system dynamic stability analysis and control; power system load flow analysis; power system operations; numerical methods in power system simulations; low voltage surge protection; power electronics. wlee@uta.edu

FRANK L. LEWIS, Ph.D., Georgia Tech, 1981, IEEE Fellow. (817-272-5972) System modeling and control; robotics and nonlinear process control; neural networks and fuzzy logic systems in feedback control; discrete event manufacturing controllers; robust and adaptive systems. lewis@uta.edu

QILIAN LIANG, Ph.D., USC, 2000. (817-232-1339) Wireless communications systems and communication theory, wireless networks, ad hoc networks, signal processing for communications multimedia, network traffic modeling and classification. liang@uta.edu.

MINGYU LU, Ph.D., Illinois at Urbana-Champaign, 2002. (817-272-0709) Computational electromagnetics, fast algorithms, antenna design, numerical analysis. mingyulu@uta.edu

MICHAEL T. MANRY, Ph.D., UT/Austin, 1976. (817-272-3483) Neural networks, image processing, digital signal processing, parameter estimation, and pattern recognition. manry@uta.edu

SOONTORN ORAINTARA, Ph.D., Boston, 2000. (817-272-3482) Wavelets, filter banks, digital signal processing, image/video/audio processing and compression, low-powered transforms and signal processing. oraintar@uta.edu

DAN POPA, Ph.D., Renssalaer Polytechnic Inst., 1998. (817-272-3342) Robotics and control systems, micro technology and MEMS. popa@uta.edu

K. R. RAO, Ph.D., New Mexico, 1966. (817-272-3478) Digital image/video/audio compression and coding for transmission and storage based on international standards (ITU, ISO, IEC). Multimedia, video indexing & retrieval. rao@uta.edu

HOWARD RUSSELL, PH.D. High Frequency Microelectronics Devices and Circuits VLSI and Semiconductors

RAYMOND R. SHOULTS, Ph.D., UTA, 1974. (817-272-3472) Advanced computer methods for power system engineering; computer simulation of power system planning; analysis of large-scale networks; optimization in power system analysis; rapid and conventional power flow techniques; reactive power flow analysis; power system operation and control; advanced automatic generation control strategies and simulation; industrial short-circuit calculations for breaker application; reliability methods in power system analysis. shoults@uta.edu

MENG TAO, Ph.D., Illinois, 1998. (817-272-5001) Semiconductor device fabrication, nanofabrication, photovoltaics and thermophotovoltaics; thin film deposition, surface engineering and quantum electronics. mtao@uta.edu

SAIBUN TJUATJA, Ph.D., UTA, 1992. (817-272-3974) Remote sensing of the environment; wave scattering and emission from random media; parametric retrieval using remotely sensed data; wireless communications; numerical techniques for electromagnetics. tjuatja@uta.edu

MICHAEL VASILYEV, Ph.D. Northwestern, 1999. (817-272-1224) Quantum and nonlinear optics, quantum electronics, optical communications, electromagnetics, nanophotonics. vasilyev@uta.edu

ZHOU WANG, Ph.D., UT Austin, 2001. (817-272-5024) Digital and biomedical signal and image processing, multimedia communications, computer vision. zhouwang@uta.edu

KAI-SHING YEUNG, Dr.-Ing., Karlsruhe, 1977. (817-272-3467) Nonlinear control; robust control; systems theory; signal processing. yeung@uta.edu

WEIDONG ZHOU, Ph.D., Michigan, 2001. (817-272-1227) Photonics and optoelectronic materials and devices; photonic crystal materials, devices and photonic integrated circuits; optical interconnect and system on a chip; nanofabrication techniques and applications. wzhou@uta.edu