



The PhD Program in Electrical and Computer Engineering

2007-08

PhD in Electrical and Computer Engineering

The PhD program in ECE provides high-quality doctoral education in electrical and computer engineering that prepares graduates for leadership in academic, industrial, or research positions. Graduates of the PhD program are able to:

- Demonstrate depth of knowledge in their specific area of research, and breadth in allied areas of electrical and computer engineering
- Identify and define research problems, and perform independent research
- Demonstrate an ability to disseminate knowledge and to communicate effectively
- Contribute to the existing knowledge in electrical and computer engineering.

Areas of Research Strength include

Antennas • Bio-engineering and bio-informatics • Energy systems • Information security and trust • Integrated circuit design and test • Intelligent systems • Mobile computing • Signal processing • Wireless communications

Faculty List and Research Interests

Name	Rank	Deg	Institution - Year	Research Interests
Ibrahim Abou-Faycal	Assistant Professor	PhD	MIT	Information Theory • Digital Communication • Optical Communication • Stochastic Systems
M. Adnan Al-Alaoui	Professor	PhD	Georgia Tech	Analog & Digital Signal Processing With Applications to Filters, Communications, Controls, and Biomedical Engineering • Pattern Recognition and Neural Networks With Applications to Character, Speech and Image Recognition
Walid Ali-Ahmad	Associate Professor	PhD	Michigan	Direct Conversion Receiver Design • RF MEMS Development • Wireless Communications • Millimeter-Wave, Microwave, and RF Receiver Design
Hassan Artail	Associate Professor	PhD	Wayne State University	Distributed Computing • Internet Technologies and Mobile Computing • Mobile Agents • Software Engineering and Software Systems • Wavelet Applications
Louay Bazzi	Associate Professor	PhD	MIT	Theory of Error Correcting Codes • Design and Analysis of Algorithms • Cryptography • Number Theory • Complexity Theory

Farid Chaaban	Professor	PhD	Liverpool	Design and Analysis of Electric Machines and Drives • Energy Systems and Their Impact on the Environment • Air Pollution from Power Plants
Riad Chedid	Professor	PhD	Imperial College	Energy Policy, Planning, and Modelin, • Design and Planning Aspects of Renewable Energy Systems • Computer-Aided Design of Electromagnetic/Electromechanical Devices • Design And Operation of Electric Drives
Ali Chehab	Assistant Professor	PhD	UNCC	VLSI Design and Design For Testability (DFT) • Dynamic Power Supply Current (Iddt)Testing • Development of Automatic Test Pattern Generation (ATPG)
Zaher Dawy	Assistant Professor	PhD	Tech Univ. Munich	Wireless Communications (GSM/EDGE, UMTS) • Hybrid Cellular-Ad Hoc Networks • Multiple User Information Theory • Multimedia Transmission Over IP Networks • Bioinformatics and Statistical Genetics
Hassan Diab	Professor and VP REP	PhD	Univ. of Bath	Performance Evaluation of Parallel Processing Systems • High Performance Reconfigurable Computing for Cryptographic Algorithms • Application-Specific Parallel Architecture • Multiprocessor and Multi-Computer Architectures • System Simulation Using Fuzzy Logic Control
Imad Elhajj	Assistant Professor	PhD	Michigan State	Remote Operation and Control of Robotic and Digital Systems • Remote Sensing • Data Fusion and Error Correction for Sensor Networks • Efficient and Safe Human Machine Interfacing
Ali El-Hajj	Professor	PhD	Univ of Rennes I	Antenna Theory • Electromagnetic Field Computations • Software Development • Telecommunication Applications
Ibrahim Hajj	Professor and Dean of the Faculty of Engineering and Architecture	PhD	UC Berkeley	Design and Verification Of VLSI Circuits and Systems • Design for Reliability and Optimization • Design Automation • Mixed-Mode Simulation • Fault Simulation and Testing
Karim Kabalan	Professor	PhD	Syracuse	Antenna Theory • Electromagnetic Field Computations • Software Development • Telecommunication Applications
Sami Karaki	Professor	PhD	Manchester	Renewable Energy Systems Modeling • Generation Expansion Planning and Production Costing • Application Of Neural Networks, Fuzzy Systems, and Genetic Algorithms in Energy Systems
Fadi Karamah	Assistant Professor	PhD	MIT	System Identification and Control • Biological Systems: Neural System Modeling, Gene Expression Arrays • Signal Processing
Ayman Kayssi	Professor and Department Chair	PhD	Michigan	Internet Technologies • Wireless Applications • Computer Networks And Data Communications • VLSI Design, Modeling And Simulation • Digital System Testing
Mohamad Mansour	Assistant Professor	PhD	Illinois	VLSI For Signal Processing, Communications And General Purpose Computing Applications • Computer Architecture • Coding Theory
Fuad Mrad	Professor	PhD	Purdue	Control • Robotics • Industrial Automation • Instrumentation
Jean Saade	Professor	PhD	Syracuse	Communication Systems • Fuzzy Sets and Logic • Design Of Intelligent Systems Using Fuzzy Logic and Other Tools • Optimization Techniques for Intelligent and Decision-Making Systems
Nassir Sabah	Professor	PhD	SUNY Buffalo	Electrophysiology of Nerve and Muscle • Modeling of the Electrical Behavior of Nerve and Muscle Cells • Modeling of the Behavior of the Human Neuromuscular System
Mazen Saghir	Assistant Professor	PhD	Toronto	Computer Architecture • Optimizing Compilers • Configurable Computing • Embedded Systems Design