Gholam H. Massiha, Ph.D.
Louisiana Board of Regent Professor in Engineering

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List of Documents In Resume'

- Degree Granting Institutions

- Employment History

    a. Employment History at UL Lafayette
    b. Prior Employment

- Academic and Professional Activities

- Publications

- Funded Grants

- Courses Taught and/or Developed

    a. Multimedia and web based courses and research
    b. Undergraduate courses

G.H. Massiha, Ph.D.

Department of Industrial Technology
University of Louisiana in Lafayette
Lafayette, LA 70503
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Degrees Granted:

Ph.D. Electrical Engineering, University of South Florida, Tampa, Florida

M.S. Physics, Eastern Michigan University, Ypsilanti, Michigan

B.S. Electrical Engineering, University of Michigan, Ann Arbor, Michigan

Professional Background:

Louisiana Board of Regents Professor in Engineering (1996-Present), Graduate Coordinator, Department of Industrial Technology, University of Louisiana at Lafayette (Professor)

- Graduate Coordinator of System Technology (master) program
- Responsible for funded research projects on reliability of electrical devices, noise measurement, controls, automation, robotics, and alternative energy construction.
- Initiated Master degree program in System Technology.
- Responsible for undergraduate and graduate courses in fields of electronics, control, automation, robotics, alternative energy, environmental technology, and graphics. Developed various online courses.
- Created robotics, control, PLC, environmental, and renovated construction laboratories.
- Responsible for preparing, writing, and assisting with NAIT/ATMAE reports for ITEC accreditation.
- Directed master and doctoral graduate student projects.

Electrical Engineering Lecturer (1993 - 1995), Department of Biological and Agricultural Engineering, University of Georgia

- Taught undergraduate and graduate courses including; circuits, feedback control, microprocessor, and electric machines lectures and laboratories.
- Created electronics, motor, and renovated PLC laboratories.
- Directed research projects on topics related to control systems.
- Conducted theoretical studies of excess noise in high temperature superconductors.

Assistant Professor (1991 - 92), Department of Physics and Engineering, Centenary College

- Coordinated 3-2 Engineering Program.
- Taught lecture/laboratory subjects including thermodynamics, strength of materials, classical mechanics and CAD. Academic advising contributions included working with engineering undergraduate students.

Research Experience:

<u>1996 – Present</u>

- Funded projects on energy conservation and alternative energy (DoE and DNR)

- Funded projects on Solar Photo Voltaic and Thermal Power plants (CLECO & LUS)

- Funded projects on automation control and robotics technology

- Coordinator of Mold detection project in hurricane devastated areas of South West Louisiana

- Director of Reliability and Noise Laboratory

- Director of Virtual Energy Construction Laboratory (DoE)

- Designed stress systems detection for metal thin films, VLSI

- Developed a highly sensitive noise measurement technique for detecting defects in thin films

- Funded research projects in theoretical studies of electromigration failure in thin films and the relation between failure time and 1/f noise

- Funded research projects in Microprocessor and control

<u>1988-1995</u>

- Designed aluminum and gold thin films for study of reliability and excessive noise measurements.

- Designed and developed sensitive low noise amplifiers.

<u>1984-1987</u>

- Design of Laser Diffused Diode Links (LDL) samples for reliability studies, DARPA.

- Study of reliability and excess noise in LDL samples.

- Study of MOS and Diodes using Deep Level Transient Spectroscopy (DLTS).
  1982-1983

- Four-wave mixing using He-Ne laser

<u>1981-1982</u>

- Investigating application of solar energy and energy conservation technology

Student Organizations and Leadership

I am student advisor to the following students club at UL Lafayette and with various ITEC student groups on campus.

- **UL Lafayette ATMAE Student Chapter**

  Preparing students to become professional technologists and leaders, coordinating fall and spring events such as crawfish boil, gumbo cook off, book sales to promote team spirit among students. The Association of Technology, Management, and Applied Engineering (ATMAE), formerly NAIT, is a national professional organization which promotes industrial technology. The group fosters learning and socialization.

- **UL Lafayette Construction Club**

  Promoting field of construction manufacturing and management, setup teams for energy audit and environmental awareness projects. Coordinating Acadian Home Builders Association and Women in Construction Scholarships for the past 17 years.

- **Engineering and Technology Week Celebration**

  ITEC faculty coordinators help students participating at Engineering & Technology Week sponsored by the College of Engineering for the past 20 years. Dr. Massiha and another colleague share this task. They prepare students projects reports for poster completion during events, judging papers, projects and contests.

- **Engineering and Technology Summer Camp**

  Organized and directed first Engineering and Summer Camp at UL in 2010. Many middle school and high school students annually attend this camp. The camp is currently run by the colleges of Education and Engineering.

Professional Affiliations:

- Active Member of Association of Technology, Management, and Applied Engineering (ATMAE)
- IEEE
- Member of Sigma Pi Sigma, National Physics Honor Society
- Charter member of Institute of Biological Engineering
- President of Society of Physics Students at USF (1985-1986)
- Vice president of Society of Physics Students at EMU (1981-1982)

External Reviewer For Journals And Textbooks:

- International Journal of Modern Engineering, 2001 – present.
- Technology Interface International Journal, 2007 – present.
- Journal of Industrial Technology, 1997 – present.
- ASEE and ASEE-GSW, 1997 - present
- IEEE electron device letters (1992- present)
- International Conference on Cybernetics and Information Technologies, Systems and Applications: CITSA (2009 – present)
- International Network for Engineering Education and Research (2005 – present)
- The International Journal of Evaluation and Research in Education (2012 – present)

Most recent College Text Books Reviews (2013 – present):

- Programmable Logic Controller, Industrial Control, 2nd Ed., 2015, Khalid Kamel, McGraw Hills Company Publisher.
- Programmable Logic Controller, 2014, Petruzela, McGraw Hills Company.
- Robotics Technology Fundamental, 2013, Keramas, Wiely Publisher.
- Electronics: Principles and Applications, 2013, Schuler, Charles, McGraw Hills Company.

Scholastic Honors:

- Louisiana BoRSF Professor in Engineering, University of Louisiana in Lafayette since 2001
- 2009 Outstanding Professor of Industrial Technology (ATMAE)
- Research Associate, Electrical Engineering Department, University of South Florida
- Graduate Teaching Assistantship, University of South Florida
- Graduate Teaching Assistantship, Eastern Michigan University
- EMU Dean scholarship for undergraduates

Additional Activities:
- Conducted research in application of science in sports
- Application of feedback control systems in agricultural equipment
- Conducted research in application of fuzzy logic in microprocessor

Athletics:

- Board Member of Cajun Running Club (1996 - 2000)
- Varsity Member of Eastern Michigan University Track and field Team.

G.H. Massiha

Articles

- "System advisor model (SAM) simulation modelling of a concentrating solar thermal power plant with comparison to actual performance data." With E.K. Ezeanya and T.L. Chambers, Cogent Engineering, 1524051, September 2018. https://doi.org/10.1080/23311916.2018.1524051

- "Optimization of a Solar Thermal Power Plant Using Automated Control System", with Joseph Kelly, Technology Interface International Journal, Vol. 18, No. 2, Spring/Summer 2018, http://tiij.org/issues/issues/spring2018/X__TIIJ%20spring%202018%20v18%20n2%20(PDW-1).pdf#page=17.

- "Material Handling and Assembly Process Optimization using Value Stream Mapping", with Daniel D. Forrest, International Journal of Robotics and Automation, Vol 6, No. 2. June 2017, ISSN: 2089-4856.

- "Strategies to Increase Representation of Students with Disabilities in Science, Technology, Engineering and Mathematics (STEM)", with Jeffery White, International Journal of Evaluation and Research in Education (IJERE), Vol.5, No.1, March 2016, pp. 1-8, ISSN: 2252-8822.

- "Increase Understanding of Materials Science Concepts with Origami Crystal Activity", TechDirections, pp 17-21, Feb 2016, (online version is available) http://www.omagdigital.com/publication/?i=289302#{%22issue_id%22:289302,%22page%22:16}.

- "Strategies to Increase Representation of Students with Disabilities in Science, Technology, Engineering and Mathematics (STEM)", with Jeffery White, International Journal of Evaluation and Research in Education (IJERE), Vol.4, No.3, September 2015, pp. 89-93, ISSN: 2252-8822, http://iaesjournal.com/online/index.php/IJERE/article/view/7604/pdf

- "Applications of FIR Neural Network in Time Series Data Prediction", with Kuldeep S. Rawat, TELKOMNIKA IJEE, Vol. 14, No. 1, April 2015, pp. 130 - 139, DOI: 10.11591/telkomnika.v14i1.7272, http://iaesjournal.com/online/index.php/TELKOMNIKA/article/view/7272/0

- "Teach Microsystems on a Tight Budget", TechDirections, pp 18-22, March 2014.

- "From CAD to Robot: Undergraduate Capstone Design in Engineering Technology", with Kuldeep S. Rawat, International Journal of Robotics and Automation, Vol. 2, No. 4, December 2013, pp. 140-148, ISSN: 2089-4856

- "A "Pilot Solar Thermal Power Plant Station in Southwest Louisiana", with Terrence Chambers, J. Raush, International Journal of Applied Power Engineering (IJAPE), Mar 2013, Vol.2, No.1, pp. 31-40, ISSN: 2252-8792, http://www.iaesjournal.com/online/index.php/IJAPE/article/view/1941.

- "A Interactive Game to Enhance Student Understanding of Materials Management", with William Mueller, Journal of Evaluation and Research in Education, Dec 2012, Vol.1, No.2, pp. 45-50, ISSN: 2252-8822, http://www.iaesjournal.com/online/index.php/IJERE/article/view/1485.

- "Discovery Camp Excites Students about Engineering and Technology Careers", TechDirections, pp 20-21, Nov 2011.

- "How to Kill A Watt and Save Energy", with Shelton Houston, TechDirections, pp 22-24, Jan 2011.

- "A Student Project Applying Automatic Identification and Data Capture for Inventory Management", with Shelton Houston, The Technology Interface Journal, Spring 2010, Vol. 10 No. 3, ISSN 1523-9926, http://technologyinterface.nmsu.edu/Spring10/.

- "Construction Students Aid in Hurricane Recovery Efforts", with Shelton Houston, TechDirections, pp 18-19, May 2010.

- "A Pilot Project in Evaluating the Use of Tablet-PCs and Supporting Technologies in Sophomore Electronic Technology Courses" (with K.S. Rawat), International Journal of Modern Engineers, Nov. 2008.

- "Improving Energy Smart Construction Technology Education, a Service Learning Experience" (with S.L. Houston), Proceedings of the 2008 NAIT Annual Conference, Nov., 2008.

- "Home Energy Conservation Audits, a Service Learning Experience for Industrial Technology Students", Proceedings of 2008 ASEE Gulf Southwest Conference, 2008.

- "Utilizing Construction Laboratory for Service Learning Program", Proceedings of 2007 ASEE Gulf Southwest Conference, 2007.

- "Hardware Implementation of FIR Neural Net for Time Series Data Prediction" (with K.S. Rawat), Proceedings of 2007 NAIT Convention, Nov, 2007.

- "Residential Energy Saving Methods" (with Herbert A. Hebert), TechDirections, pp 29-31, September 2007.

- "A Novel Design for Tri-State Nano Molecular Memory", (with J. Choudhury), Proceedings of 2006 NAIT Convention, Nov, 2006.

- "One-over-f Noise Characterization of Magneto-Resistive Read/Write Head" (with K.S. Rawat), Proceedings of 2006 NAIT Convention, Nov, 2006.

- "Studying Magneto-Resistive Read-Write Head Reliability Using Low-Frequency Noise Measurement Technique" (with K.S. Rawat), The Journal of Industrial Technology, Vol. 18, No. 2, October 2006.

- "Ultra-Fast Parallel Analog to Digital Converter (ADC)" (with J. Choudhury), Proceedings of 2005 NAIT Convention, St. Louis, Mo, Nov, 2005.

- "An Interdisciplinary Approach to Undergraduate Robotics Course Projects" (with K. Rawat), Proceedings of 2005 NAIT Convention, St. Louis, Mo, Nov, 2005.

- "I-V Fluctuation of Benzene Molecule as P-Type or N-Type Active Element" (with J. Choudhury), SPIE International Symposium Fluctuations and Noise, Austin, Texas, May 2005.

- "Studying the Dependence of Low-Frequency Noise on Geometrical Shape of Al-Based Thin Film Interconnects" (with J. Choudhury), SPIE International Symposium Fluctuations and Noise, Austin, Texas, May 2005.

- "Low Frequency Noise Measurement Based Reliability Testing of VLSI Interconnects with Different Geometry" (with K. S. Rawat), IEEE Electron Devices, Vol. 25, No. 12, p781-783, Dec. 2004.

- "Fuzzy Logic Based Building Energy Management System" (with K.S. Rawat), Proceedings of 2004 NAIT Convention, Louisville, KY, Oct, 2004.

- "An Efficient Encoding Scheme for Ultra-Fast Flash ADC", (with J. Choudhury), Proceedings of The 5th Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems , Atlanta, GA, September 2004.

- "A Hands-On Laboratory Based Approach to Undergraduate Robotics Education" (with K. Rawat), Proceedings of IEEE 2004 International Conference on Robotics and Automation, New Orleans, LA, April 2004.

- "Secure Implementation of a Web Server for Research Facility", (with K. Rawat), Proceedings of 2003 NAIT Convention, Nashville, TN, Nov, 2003. Selected Paper

- "ASIC Design and Implementation of a Temperature Monitoring Chip", (with K. Rawat), Proceedings of 2003 NAIT Convention, Nashville, TN, Nov, 2003.

- "Rope Climber Transport Vehicle: A Design Challenge", (with K. Rawat), TechDirection Journal, pp22-25, October 2003.

- "Accurate Modeling of Thin-Film Inductance for Nano-Chip" (with J. Choudhury), Nanotechnology, 2003, 2003-IEEE NANO, Third IEEE Conference vol.1, pp351-355, San Francisco, CA, August 2003.

- "New Nano-Electronic Memory using Multi-Level Logic Principle" (with J. Choudhury), Nanotechnology, 2003. 2003-IEEE NANO, Third IEEE Conference vol. 1, pp160-163, San Francisco, CA, August 2003.

- "Initiating a Program in Nano-technology through a Structured Curriculum", (with J. Choudhury and K. Rawat), 2003 International Conference on Microelectronic Systems Education, Anaheim, CA, June 2003.

- "Secure Multimedia Transmission Over Wireless Networks: Issues and Challenges" (with K.S. Rawat), IEEE section IV annual meeting, New Orleans, April, 2003.

- "Designing A Telemetric Data Acquisition System For Clinical Studies", (with K.S. Rawat), Proceedings of 2003 ASEE Gulf Southwest Conference, Arlington, TX, March, 2003.

- "Model Driven Robot Simulation: RoboCell" (with K.S. Rawat), Proceedings of 2003 ASEE Gulf Southwest Conference, Arlington, TX, March, 2003.

- "A Systematic Approach to Design a PC-Based Data Acquisition System" Proceedings of 2002 NAIT Convention, Panama City, FL, Nov, 2002. * Selected Paper*

- "Investigating Electrical Noise Signal in Thin Metal Film" (with K. Rawat), The Journal of Industrial Technology, Vol. 18, No. 2, April 2002.

- "Determining Watts and Kilowatt-Hours" (with Allen Smith), TechDirection Journal, Vol. 61, No. 8, page 18-20, March 2002.

- "Design Competition Missile Launching Vehicle" (with Levonia Theriot), TechDirection Journal, Vol. 61, No. 1, page 16-18, August 2001.

- "Training Students in the Reliability and Noise Laboratory" (with K.S. Rawat), Proceedings of 2001 ASEE Gulf Southwest Conference, College Station, TX, March, 2001.

- "Virtual-web Energy Demonstration", (with Chun Lau, Allen Smith, Beth Black), Proceedings of 2001 ASEE Gulf Southwest Conference, College Station, TX, March, 2001.

- "Senior Projects in Noise Measurement Laboratory", Proceedings of 2000 NAIT Convention, Pittsburgh, PA, Nov. 2000.

- "Virtual Web Energy Demonstration Construction Center at UL Lafayette", Proceedings of 2000 NAIT Convention, Pittsburgh, PA, Nov. 2000.

- "Low Noise Amplifier design, Proceedings of 2000 ASEE Conference", Las Cruses NM, April, 2000.

- "Characteristic of Robotic Feedback Control", Proceedings of 1999 ASEE Conference, Dallas, TX, March, 1999.
- "Teaching Robotics Feedback Control Characteristics", Abstract, Proceedings of 1999 NAIT Conference, Panama City, FL, Nov., 1999.

- "Facilitating Industrial Technology Course Design", Proceedings of 1998 NAIT Conference, Indianapolis, IN, October 1998.

- "Design of a Temperature Monitoring System Using Microprocessor", Proceedings of 1998 ASEE Conference, New Orleans, LA, March, 1998.

- "Intelligent Sorter, Application of Microprocessor as a Controlling Device", Proceedings of 1997 ASEE Conference, Houston, TX, March, 1997.

- "Introduction of PLCs to Industrial Technology Students as a Basic Part of an Electronics Course", Proceedings of The International Conference on Agile Manufacturing, Lafayette, LA, February 1997.

- "Characterization of Excess Electrical Noise in Al-thin Films", Proceeding of IEEE Southeastcon'95, Raleigh, NC, March, 1995.

- "Relation Between Excess Electrical Noise and Electromigration in Al-Based Thin Films", Proceeding of ICEE 93, May 1993.

- "Reliability Measurement Techniques for Laser-Induced Diode Links", Proceeding of IEEE Southeastcon'93, Charlotte, NC, April 1993.

- "Reliability Test of Interconnections Using Electrical Noise Measurement", Proceeding of IEEE Southeastcon'92, Vol. 2, Birmingham, Alabama, April 1992.

- "Reliability of Laser-Induced Diode Links for Wafer-Scale Integration", Circuits, Systems, and Information, TSI Press, M. Jamshidi, August 1991.

- "Excess Electrical Noise in Aluminum-based Thin Films", Ph.D. Dissertation, April 1991.

- "Electromigration in Laser Diffused Diode Links of Wafer-Scale-Integration and Detecting Techniques", Proceeding of Florida Society for Electron Microscopy, the Journal of Electron Microscopy Techniques, Clearwater, Florida, April, 1990.

- "Reliability and Resistance Minimization Studies of Laser Diffused Links in Wafer-Scaled-Integration" (with C. Fang), Proceeding of 19th European Solid State Device Research Conference, Berlin, West Germany, September, 1989.

- "Detection of Defects in Thin Al-films Using an Ultra Sensitive Dual Channel Noise Measurement System" (with Charles Chen), Proceeding of IEEE Southeast Conference, Columbia, South Carolina, April, 1989.

- "Detection of Hot Spots in Thin Metal Films Using Thermal Noise Measurement" (with Charles Chen), IEEE Electron Device Letters, Vol.10, No. 2, February 1989.

PRESENTATIONS:

Numerous presentations from 1981 through present at IEEE, ASEE, SPIE, NAIT, and ATMAE national and regional conferences and conventions.

G.H. Massiha

$8,000   Co-PI, Production of BioPower and BioProducts from Waste Streams Using Micobial Fuel Cell, LaSPACE GSRA Program, 2018-2019. E. Revellame as PI.

$85,000   PI, Integrating Programmable Logic Controller System to Enhance Targeted Automation and Manufacturing Technology Courses, Louisiana Board of Regents Enhancement, 2015-2016
The Programmable Logic and Controllers laboratory is updated with new versions of analog Allen Bradley PLCs with computers and simulations.

$151,000   PI, Acquisition of Robotics System to Enhance Targeted Automation Control and Manufacturing Teaching and Research, Louisiana Board of Regents Enhancement, 2012-2014.
The Robotics Lab was updated with six new versions of Scorbot ER-4 Robots with computers and two different simulations. More students can register for the course. Two of the students graduated this year found jobs at Nobel Plastics setting up robots for manufacturing assembly.

$850,000   Co-PI, EmPower Louisiana, Renewable Energy Program, Department of Energy, 2010-2012, Building a solar power station in Crawley, Louisiana for teaching and research purposes. Terrance Chambers as PI.

$36,000   PI, Gear UP Summer Engineering and Technology Camp, Department of Education, 2010
First ever Engineering and Technology camp was designed and successfully conducted. More than 40 students from low income families attended two one-week camps. Dr. J. Carroll from Civil Engineering assisted Dr. Massiha and conducted ET camp in 2011.

$30,000   PI, Environmental Awareness Service Projects for Low Income Homes, Louisiana Service Grant, 2009-10

Students from College of Engineering and ITEC conducted workshops and prepared web pages to better public information of local environmental issues. Other faculty from ITEC assisted in this project as well.

$30,000   PI, Energy Home Audit and Survey in South Louisiana Home, Louisiana Service Grant, Jan 2008-June 2009

Home of low income families were surveyed for energy consumption. This project is still running strong every spring by students in Dr. Massiha's environmental Technology, ITEC 415.

$60,000   PI, Energy Home Audit and Survey in South Louisiana Home, Louisiana Service Grant, Jan 2008-June 2009
More than 200 houses were examined for mold in south Louisiana. Results were decimated to the owners.

G.H. Massiha

$62,000   Co-PI (Author), Study of Mold and Moisture Control in South Louisiana construction aftermath of 2005 Hurricanes, Louisiana Service Grant, Jan 2007-June 2008

$58,000   PI, Computer Network Laboratory for the Construction and Manufacturing Programs (CMnet)*,* Board of Regents Support Fund (BoRSF) Enhancement, 2003-05.
Full PC lab for the construction technology was designed. Students in construction were increased by 200% after implementing this lab.

$183,000   Co-PI, Establishment of the Louisiana Supply Network Education Testbed (*LouiSNET*), Louisiana Board of Regents, 2002-05.

$242,000   PI, Energy Conservation/Management Construction Center, Louisiana Department of Natural Resources, 2000 – 2003.

                   Web pages were set up for public to study energy consumption and methods of energy saving and alternative energy in Louisiana. Many workshops were conducted and students assisted in building several small energy efficient constructions around Lafayette.

$86,000   PI, Control and Manufacturing Laboratory Enhancement, Louisiana Board of Regents Enhancement, 2000-2001

                   New programmable logic controllers (PLC) were purchased for the automation lab. This lab is enhanced recently with STEP grant funds. This lab did not exist before arrival of Dr. Massiha.

$162,000   PI, Reliability and Noise Measurement Testing, Louisiana Board of Regents (BORSF) Research and Development Competitiveness, 1999 –2003.
Undergrad and graduate students studied reliability of electrical contacts in this lab.

$40,000   CO-PI, Microprocessor Laboratory System, Louisiana Board of Regents (BoRSF) Enhancement, 1998 - 2000.

                   Dr. Massiha and Dr. Aissi set up the very first microprocessor lab in ITEC department. Each teach ITEC 324 and 326 every other semester from 1998-2008.

$32,000   CO-PI, Microsoft Software Grant, 1997, MS granted approximately $32,000 worth of software and multiple user license to ITEC. The software is used in the electronics and control laboratory, 1997.

                   Dr. Massiha and Dr. Aissi used the grant to update the software in ITEC lab and have the licenses automatically renewed for three years.

$15,000   PI, Recipient of UL Lafayette Engineering Summer Research Awards in 1997, 1999, and 2003

Industrial Technology (ITEC)   **Electrical and Computer (EECE)**

ITEC 103   **Graphics.** Introduction to fundamental techniques of drafting using sketching and CAD.

ITEC 220   **Electronics I.** Basic circuits and components and analysis of DC and AC circuits. Laboratory application in instrumentation and trouble shooting.

ITEC 250   **Construction and Manufacturing Technology I.** Construction process; including design, specifications, insulation, energy use, purchase of light building material and equipment.

ITEC 320   **Electronics II.** Introduction to diodes, transistors, amplifiers, and integrated circuits and Laboratory application.

ITEC 322   **Digital Electronics Technology.** Digital logic, number systems, digital hardware and interfacing. Study IC types, memory circuits, flip flop, and ADC converters.

ITEC 324   **Microprocessor Technology.** Students will be introduced to microprocessor-based systems. MPU architecture, number systems, and assembly language programming will be covered. Potential for Utilization in control system development is presented.

ITEC 326   **Advanced Microprocessor Technology.** Multiplexing, I/O control handshake, PIA, DAC, ADC devices. Study of 16 and 32 bit processors.

ITEC 328   **Programmable Logic Control.** Logic concept, controller hardware and software, ladder programming, installation and trouble shooting of various PLCs.

ITEC 329   **Motors and Control Technology.** Electromagnetic theories, single and multiphase wiring and distribution systems, motor starters and stopping technologies, and motor control system.

ITEC 415   **Technology And Environmental Issues.** Impacts of technology on the environment; technological aspects of environmental issues, laws, and regulations.

ITEC 424   **Robotics Technology.** Study of commercially available robotic systems. Safety applications and maintenance and automation.

ITEC 497/498 **Directed Individual Studies.** I strongly encourage students to take part in independent study course. Students may pick any subjects and they must write a report or show their work on Internet.

*ITEC 250/350 **Construction Technology I & II.** Construction process, design, specification, purchase of residential and light commercial building and materials and equipment. **(team teaching 2008-2010)**

EECE 590   **Special Topics**. New and emerging topics in electrical engineering.

EECE 597/8 **Directed Individual Study**. Guided individual study and research in selected topics.

Engineering and Engineering Technology

ET 380   **Electrical Systems.** Application of electricity to agriculture; wiring systems for farm buildings; selecting, using, and controlling electrically operated equipment in farming operations.

ET 430   **Measurement and Control Systems for Agri-Industries.** Measurement of process control variables and implementation of microcomputer-based measurement and control systems.

ET 460   **Electrical Power for Agri-Industrial Applications.** Fundamentals and utilization of electric power relative to energy transmission, AC and DC electrical machines, industrial controls and power semiconductors; equipment-theory of operation, evaluation and selection for given tasks.

ES 383   **Electric Circuits.** An introductory course including definitions of electric circuits parameters, Kirchoff's and Thevenin's Laws, circuit analysis, complex notations, mesh and nodal analysis resonance and polyphase circuits.

ES 384   **Introduction to Microprocessor Systems.** Students will be introduced to microprocessor-based systems. MPU architecture, number systems, and assembly language programming will be covered. Potential for Utilization in control system development is presented.

ES 385   **Electrical Machines.** A laboratory analysis of the operating characteristic of transformers, alternators, polyphase motors, single phase motors and DC generators and motors.

ES 387   **Engineering Electronics.** Electronics devices, including transistors, with particular emphasis on design of circuits for small signal amplifiers, relays, timers, and solid state electronics.

AEN 466   **Feedback Control Systems.** Development and solution of differential equations that describe systems encountered in engineering. Feedback principles will include block diagram representation and simplification, system transfer functions, system types and characteristics, stability criterion, and frequency response methods of system analysis and compensation, and control system design.

AEN 480   **Microprocessor Based Control Systems.** The necessary background to enable students to design and develop microprocessor based control system is covered. Coverage of system architecture input/output problems and programming will equip students for system design.

Web Pages (Online):

These pages were designed for various funded projects through the university or Louisiana university system board and Department of Natural Resources and my other teaching and research accounts. The updating is part of my graduate students' assignments for certain projects under my guidance. Web pages for courses are being placed and updated on **ULL Moodle system** for the past two years. A series of 12 videos of my lectures are available on DVD with no additional charges to UL students. The funds supporting this project are through my various teaching grants.

Research Pages:

1. Virtual Energy and Demonstration Center: www.vedcc.org

2. Electrical Noise: www.electricalnoise.net

Teaching Hybrid (Moodle):

1. Analog Electronics I

2. Digital Electronics II

3. Control Systems and Programmable Logic Controllers

4. Environmental Technology

5. Robotics and Automation Systems