

## RESUME

### I. PERSONAL DATA

**Name:** Bettayeb, Maamar

**Date of Birth:** June 7, 1953

**Citizenship:** Algerian

**Marital Status:** Married

**Address:** Professor Maamar Bettayeb  
Electrical and Computer Engineering Department  
College Of Engineering  
University of Sharjah  
P.O.Box 27272, Sharjah  
United Arab Emirates

Phone: 971 6 5050930 (Office)  
Mobile: 050 5878047  
Fax: 971 6 5050872  
email: [maamar@sharjah.ac.ae](mailto:maamar@sharjah.ac.ae)

**Research Position:** Head, Intelligent Systems and Infrastructure Research Group  
Editor-in Chief, UOS Journal of Pure & Applied Sciences  
Associate Editor, International Journal IJMIC  
Chair, Strategic Planning University Committee for Research

### Fields of Interest and Specialization:

- Digital Signal Processing and Applications to Communications
- Wavelets and Applications
- Higher - Order Statistics and Applications
- Image Restoration and Compression
- $H_\infty$  Estimation, Identification, Filtering and Control
- Nonlinear Estimation and Modeling
- Singular Perturbation Modeling and Control
- Decentralized Estimation and Control
- Optimal Model Reduction
- Fractional Systems
- Networked Control Systems
- Application of Signal Processing and Control Theory to Electric Power Systems and Petrochemical Plants
- Genetic Algorithms, Particle Swarm, Bacterial, Foraging and Hybrid Optimization, Neural Networks and Fuzzy Logic
- Ultrasonic Nondestructive Testing
- Renewable Energy Systems
- Engineering Education

## **II. ACADEMIC HISTORY**

***Ph.D.: August 1981*** (4.0/4.0 G.P.A.)

Electrical Engineering, University of Southern California, Los Angeles, California, USA

***M.Sc.: January 1978*** (4.0/4.0 G.P.A.)

Electrical Engineering, University of Southern California, Los Angeles, California, USA

***B.Sc.: June 1976*** (High Honors)

Electrical Engineering, University of Southern California, Los Angeles, California, USA

## **III. WORK EXPERIENCE**

### **September 2002 to Present**

Professor, Electrical and Computer Engineering Department

College Of Engineering

University Of Sharjah

Sharjah, United Arab Emirates

Distinguished Adjunct Professor, King Abdulaziz University, Jeddah, KSA(March 2012-Present)

### **Summer 2007**

Acting Dean, College Of Engineering

University Of Sharjah

Sharjah, United Arab Emirates

### **Summer 2006**

Acting Dean, College Of Engineering

University Of Sharjah

Sharjah, United Arab Emirates

### **September 2004 to September 2006**

Advisor to Chancellor for Graduate Studies and Scientific Research

University Of Sharjah

Sharjah, United Arab Emirates

### **September 2005 to September 2006**

Director, Research and Studies Center

University Of Sharjah

Sharjah, United Arab Emirates

### **Summer 2002**

Acting Dean, College Of Engineering

University Of Sharjah

Sharjah, United Arab Emirates

### **August 2000 to September 2002**

Chairman and Professor, Electrical and Computer Engineering Department

College Of Engineering

University Of Sharjah

Sharjah, United Arab Emirates

### **December 1998 to July 2000**

Professor, Electrical Engineering Department

King Fahd University of Petroleum and Minerals

Dhahran, Saudi Arabia

**August 1991 to November 1998**

Associate Professor, Electrical Engineering Department  
King Fahd University of Petroleum and Minerals  
Dhahran, Saudi Arabia

**September 1988 to July 1991**

Assistant Professor, Electrical Engineering Department  
King Fahd University of Petroleum and Minerals  
Dhahran, Saudi Arabia

**October 1982 to August 1988**

-Head of Instrumentation and Control Department, High Commission for  
Research, Algiers, Algeria  
-Teaching in Graduate Program, High Commission for Research, Algeria

**September 1984 to August 1988**

Technical Consultant to National Industries in Instrumentation and Control, Algeria.

**October 1986 to March 1987**

Technical Expert, Atomic Energy Commission, Argentina, for the design of the instrumentation and computer control system of a Nuclear Research Reactor, Argentina.

**September 1982 to June 1983**

Teaching Position (Part time), Telecommunication Institute, Algiers, Algeria.

**July 1982 to October 1982**

Consultant to Major Oil Company, SONATRACH, Design of Instrumentation and Control for Petrochemical Refineries, Algeria.

**September 1981 to May 1982**

Research Engineer, Bellaire Research Center, Shell Development Company, Houston, Texas, U.S.A.

**September 1977 to June 1981**

Research Assistant and Reader, Electrical Engineering Department  
University of Southern California, Los Angeles, California, U.S.A.

**IV. PROFESSIONAL MEMBERSHIP**

Senior Member IEEE, along with following society affiliations:

- Automatic Control
- Signal Processing

**V. RESEARCH****A. JOURNAL PUBLICATIONS**

[J1] M. Bettayeb, "New interpretation of balancing state space representations as input-output energy minimization problem", International Journal of Systems Science, Vol. 22, No. 2, pp. 325-331, February 1991.

[J2] M. Bettayeb and U.M. Al-Saggaf, "Correspondence: Linear System Reduction using Approximate Moment Matching", IEE Proc., Vol. 137, Pt.D, No. 5, September 1990.

- [J3] U.M. Al-Saggaf and M. Bettayeb, "Optimization in Model Reduction", Arab J. Sci. and Engg., Volume 15, Number 4B, pp. 705-719, Oct. 1990.
- [J4] M. Bettayeb and I.M. Al-Farra, "Optimal and Suboptimal Power Spectrum Estimation Techniques", Arab. J. Sci. and Engg., Special Issue on Optimization, Volume 16, Number 2B, pp. 215-232, April 1991.
- [J5] M. Bettayeb and U.M. Al-Saggaf, "DCS Control and Application Software: Present and Future Trends, Journal of Engineering, Vol. 1, No. 1, 1991.
- [J6] A. Cherid and M. Bettayeb, "Reduced-Order Models for dynamics for single machine power system via Balancing", Electric Power Systems Research, Vol. 22, pp. 7-12, 1991.
- [J7] A. Cherid and M. Bettayeb, "Automatic Generation Control of Multi-area Power Systems Using Reduced Order Controller", Electric Machines and Power Systems, Volume 24, Number 1 pp. 1-8, Jan. - Feb. 1996.
- [J8] D. Kavranoglu and M. Bettayeb, "Direct state space solution to the Discrete time  $H_\infty$  One-Block Problem", IEEE Transactions on Automatic Control, Vol. 4, 38, No. 4, pp. 606-611, April 1993.
- [J9] M. Bettayeb and A. Zerguine, "Fractionally-Spaced Equalization using the Lattice Structure", Computers and Electrical Engineering: An International Journal, Vol. 21, No. 1, pp.47-55, 1995.
- [J10] D. Kavranoglu and M. Bettayeb, "A new General State-space representation for discrete time systems", International Journal of Control, Vol. 58, No. 1, pp. 33-49, July 1993.
- [J11] D. Kavranoglu and M. Bettayeb, "Characterization of the Solution to the Optimal  $H_\infty$  Model Reduction Problem", Systems & Control Letters, Vol. 20, pp. 99-107, 1993.
- [J12] D. Kavranoglu and M. Bettayeb, "Optimal  $H_\infty$  General Distance Problem with Degree Constraint", International Journal on Robust and Nonlinear Control, Vol. 4, pp. 289-299, 1994.
- [J13] M. Bettayeb and U. M. Al-Saggaf, "Practical Model Reduction Techniques for Power Systems", Electric Power Systems Research, Vol. 25/3, pp. 169-176, 1992.
- [J14] D. Kavranoglu, and M. Bettayeb, "Characterization and Computation of the Solution to the Optimal  $L_\infty$  Approximation Problem", IEEE Tran. Auto. Cont., Vol. 39, pp. 1899-1904, September 1994
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- [J16] U.M. Al-Saggaf and M. Bettayeb, " Comments on Minimum Sensitivity IIR Filter Design Using Principal Component Approach", IEE Proceedings, Part G, V. 140, No. 4, p. 312, August 1993.
- [J17] S.A. Al-Baiyat, A.S., Farag and M. Bettayeb, "Transient Approximation of a Bilinear Two-Area Interconnected Power System", Electric Power Systems Research, Vol. 26, No.1, pp. 11-19, 1993
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- [J22] F.D. Barb, M. Bettayeb, S. Djennoune and M. Weiss "A performance Index for Model Reduction of Sampled-Data Systems", *Studies in Informatics and Control*, vol. 1, No. 4, pp. 325-334, December, 1992.
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- [J24] M.A. Mohiuddin, M. Bettayeb and Y.A. Khulief, "Dynamic Analysis and Reduced Order Modelling of Flexible Rotor-Bearing systems" *Computers and Structures, An International Journal*, Vol. 69, pp. 349-359, 1998.
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- [J34] M. Bettayeb and S.U.A. Qidwai, "Recursive Estimation of Power System Harmonics", *Electric Power Systems Research Journal*, vol. 47, No. 2, pp.143-152, October 1998.
- [J35] M. Bettayeb and S.U.A. Qidwai, "A New Flux Based Harmonic Elimination Technique", *Electric Machines and Power Systems*, Vol. 27, No. 9, pp.955-966, September 1999.
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1997.

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- [J64] R. Mansouri, M. Bettayeb, S. Djennoune, "Non integer order system approximation by integer reduced model", Journal Européen des Systèmes Automatisés, JESA, Vol. 42, pp. 689-700, 2008.
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- [J67] R. Mansouri, S. Djennoune, and M. Bettayeb. "Multivariable Fractional Order System Approximation Using Integral Representation", submitted for publication in Taylor & Francis Journal Mathematical and Computer Modelling of Dynamical Systems, 2008.

- [J68] A. Y. Boubas and M. Bettayeb, “An Automata Approach to Signed Integers Encoding for All-Optical Computations”, Submitted, IET Proceedings on Circuits, Devices & Systems, October, 2008.
- [J69] A. Y. Boubas and M. Bettayeb, “Multi-Bit Extension to the Multi-Valued All-Optical Logic”, Submitted, Applicable Algebra in Engineering, Communication and Computing, November, 2008.
- [J70] S. Djennoune and M. Bettayeb, “Closed-loop Balancing for a Class of Nonlinear Singularly Perturbed Systems”, International Journal of Systems Science, Vol. 40, No. 3, pp. 223-235, March 2009.
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- [J72] T. Djamah, S. Djennoune, and M. Bettayeb, “Diffusion processes Identification in cylindrical geometry using fractional models”, Phys. Scr. T 136, 014013, 2009.
- [J73] R. Mansouri, M. Bettayeb and S. Djennoune, "Multivariable Fractional System Approximation with Initial Conditions using Integral State Space Representation", Computers and Mathematics with Applications, Volume 59, Issue 5, Pages 1842-1851, March 2010.
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- [J79] S. Saadi,, M. Bettayeb and A. Guessoum, “Optimal approach for neutron images restoration using particle swarm optimization algorithm with regularization”, Journal of Applied Sciences, Volume 10, pp 517-525, 2010.
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- [J87] M. A. Al-Radhawi and M. Bettayeb, "Guaranteed Cost Decentralized Output-Feedback Control With Packet Losses: A Jump System Approach", Submitted to *International Journal of Control*, 2011.
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- [J89] M. A. Al-Radhawi and M. Bettayeb, "Decentralized  $H_\infty$  Dynamic Routing Scheme with Switching Topology and Interconnected Delays", Submitted to *IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics*, 2011.
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## B. CONFERENCE PUBLICATIONS

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No.	Invention or design	Year
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- [TR24]  $H_\infty$  Approximation in 2-D systems and image processing, with D. Kovranoglu, Progress Report #1, KFUPM sponsored project No. SE/IMAGE/170, June 1, 1995.
- [TR25] Ibid. Progress Report # 2, May 1996.
- [TR26] "Advanced Cost-Effective Ultrasonic Examination and Assessment in Industrial Components", with A. Yamani and Z. Al-Akhdhar, KACST AR-16-88 Progress Report 1, June 20, 1997.
- [TR27] Ibid. Progress Report # 2, December, 1997.

- [TR28] Ibid. Final Report, November, 1998.
- [TR29] "High Order Based Deconvolution of NDT Ultrasonic Data", with A. Yamani, SABIC Progress Report 1 (EE/SABIC/96-8), June 1997.
- [TR30] Ibid. Progress Report # 2, January 1998.
- [TR31] Ibid. Final Report, November, 1998.
- [TR32] "Development and Evaluation of a Fault Detection and Diagnosis Scheme for Industrial Applications", with M. A. Ubaid, SABIC Progress Report 1 (EE/SABIC/96-10), June 1997.
- [TR33] Ibid. Progress Report # 2, March 1998.
- [TR34] "Assessment of Potential Techniques for Identification of Harmonic Distortion in Industrial Plants", with S. U. A. Qidwai, SABIC Progress Report #1, Project No. EE/SABIC/98-1, December 1998.
- [TR35] Ibid. Final Report, April 1999.
- [TR36] "Electromagnetic radiation from cellular phones in the presence of the human head and methods to minimize the risk", with Dr. A. Hamid, University of Sharjah funded project, Progress Report #1, December 2002.
- [TR37] Ibid. Progress Report # 2, December 2003.
- [TR38] "VIRTUAL-SYDECOM: Distributed Internet-Based advanced methods in support of systems design, control and management in engineering practice", Awarded Alexander von Humboldt Funding, European Cooperative Research project, Progress Report #1, June 2004.
- [TR39] Ibid. Progress Report # 2, June 2005.
- [TR40] Ibid. Final Report, June 2006.
- [TR41] "Intelligent Systems and Infrastructure", Research Group Coordinator, Annual Progress Report # 1, July 2004.
- [TR42] Ibid. Progress Report # 2, July 2005.
- [TR43] Ibid. Progress Report # 3, July 2006.
- [TR44] Ibid. Final Report, July 2007.
- [TR45] , "Wearable foetal monitor and early warning system for foetal distress conditions" Semi-Annual Progress Report, February 2007.

## **F. FUNDED PROJECTS**

- [FP1]Principal Investigator, "Standardization of Nuclear Instrumentation", High Commission for Research, Algeria, 1984-1985.
- [FP2]Principal Investigator, "Design and Development of Nuclear Instrumentation for Detection,

- Acquisition, measurement and Control", High Commission for Research, Algeria, 1985-1988.
- [FP3]Principal Investigator, "Design of a Nuclear Power Plant Simulator", High Commission for Research, Algeria, 1985-1987.
- [FP4]Principal Investigator, "Development of a Software Package for Control Systems Analysis and Design", High Commission for Research, Algeria, 1986-1988.
- [FP5]Principal Investigator, "Control Room Design of a Research Nuclear Reactor", High Commission for Research, Algeria, October 1986-March 1987.
- [FP6]Project Technical Leader, "Design and Construction of the First Nuclear Research Reactor for Algeria", High Commission for Research, Algeria, 1987-1988.
- [FP7]Co-Investigator, "Evaluation of Distribution Control Systems", Project requested and funded by Yanbu Refinery, October 1989 - December 1989.
- [FP8]Co-Investigator, "Development of Advanced Computer Control for Petrochemical Industries", Project approved by KACST, Project No. AR-11-17, Duration: 26 Months, Starting date: November 1991.
- [FP9]Co-Investigator in KFUPM sponsored research project, "Discrete-time Four-block General Distance Problem and Applications to Control, Filtering and Estimation", Project No: SE/DISCRETE/142, Duration: 30 Months, Starting date: April 15, 1992, Completed April, 1994.
- [FP10]Co-Investigator in KFUPM sponsored project, "  $H_\infty$  Approximation in Two-Dimensional Systems and Image Processing", Project No: SE/IMAGE/170, Duration 39 months, Starting date: December 1, 1994.
- [FP11]Co-Investigator "Advanced cost-effective Ultrasonic Examination and Assessment in Industrial Components", KACST Project AR 16-88, Duration: 20 months, Starting date: December 11, 1996.
- [FP12]Co-Investigator, "Application of AI for Power Systems On-Line Security Assessment and Control", Submitted for University Funding, May 1996.
- [FP13]Principal Investigator, "Development and Evaluation of a Fault Detection and Diagnosis Scheme for Industrial Applications", SABIC Funding, Research Project NO. EE/SABIC/96-10, Duration: 18 months, starting date: December 15, 1996.
- [FP14]Co-Investigator, "High Order Statistics-Based Deconvolution for Ultrasonic Non Destructive Testing of Materials", SABIC Funding, Research Project No. EE/SABIC/96-8, Duration:18 months, starting date: December 1, 1996.
- [FP15]Co-Investigator, "Coding for Arabic Speech Signals at Low-Rates", Submitted to Research Institute, ITT Funding, June 1996.
- [FP16]Principal Investigator, "Assessment of Potential Techniques for Identification of Harmonic Distortion in Industrial Plants", with S. U. A. Qidwai, SABIC Funding, Research Project No. EE/SABIC/98-1, Duration:10 months, starting date: September 15, 1998.
- [FP17]Co-Investigator, "Mixed  $l_2$ - $l_p$  Norm Adaptive Algorithms for System Identification: Application to Echo Cancellation", with A. Zerguine, University Research Project, Duration:30 months, starting date: September 1, 1998.

- [FP18]Co-Investigator, "Weighted Least Squares-Based State Estimator for Online Monitoring of Water Distribution Systems in SABIC", with I. Habiballah, SABIC Project, submitted for year 1998-99.
- [FP19]Co-Investigator, "Defect Impulse Response-Based Classification Scheme in Ultrasonic NDT: Application to Hydrogen Induced Crack", with A. Yamani, SABIC Project, Duration: 10 months, starting date: April 1, 1999.
- [FP20]Co-Investigator, "Electromagnetic radiation from cellular phones in the presence of the human head and methods to minimize the risk", with Dr. A. Hamid, University of Sharjah funded project, Duration: 2 years, starting date, April 1, 2002.
- [FP21] Principal Investigator, "e-learning in Engineering Education", Independent Research, from 9/2001 to 6/2003, In progress, Main Researcher.
- [FP22] Principal Investigator, "Compression of Arabic Speech", Independent Research, from 11/2001 to 11/2002, In progress, Main Researcher.
- [FP23]Principal Investigator, " Approximation of Nonlinear Systems", Independent Research, from 8/2001 to 6/2002, In progress, Main Researcher.
- [FP24] Principal Investigator, "Wavelet Analysis of Harmonic Signals", Independent Research, from 1/2002 to 12/2002, In progress, Main Researcher.
- [FP25] Principal Investigator, "GA-Based Estimation of Signals in Multiplicative Noise", Independent Research, from 1/2002 to 6/2003, In progress, Main Researcher.
- [FP26] Principal Investigator, "Fractional Order System Dynamics Modeling and Control", Independent Research, from 1/2005 to present, In progress, Main Researcher.
- [FP27] Co- Investigator, "VIRTUAL-SYDECOM: Distributed Internet-Based advanced methods in support of systems design, control and management in engineering practice", Awarded Alexander von Humboldt Funding, European Cooperative Research project, June 2003, Duration: 3 years.
- [FP28] Principal Investigator, "Wearable foetal monitor and early warning system for foetal distress conditions" with S. U. A. Qidwai, ASTF Funding, Duration:12 months, starting date: October, 2006.
- [FP29] Co- Investigator, "Ultrasonic Flow measurements with applications", with Dr. H. El Mehdi, University of Sharjah funded project, Duration: 2 years, starting date, October 2006.
- [FP30] Co- Investigator, "Comparison of Time-Frequency and Wavelet methods with possible applications to EEG signal analysis and image quality assessment.", with Prof. B. Boashash, University of Sharjah funded project, Duration: 3 years, starting date, December 2006.

## **G. PEER REVIEWER**

Reviewed articles for:

- IEEE Transactions on Circuit and Systems
- IEEE Transactions on Automatic Control
- IEEE Transactions on Evolutionary Programming
- IEEE Transactions on Signal Processing

- IEEE Transactions on Neural Networks
- IEEE Transactions on Instrumentation and Measurement
- IEEE Transactions on Control Systems Technology
- The 12th National Computer Conference
- Joint Automatic Control Conference
- IEEE Conference on Decision and Control
- ISCAS
- ISSPA
- ICASSP
- ACIT
- International Journal of Modeling and Simulation
- Systems and Control letters
- Proceedings of IEE
- European Journal of Control

Reviewed for KACST research projects, ASJE journal, K.A.U. journal, KFUPM research projects

## VI. TEACHING

### TELECOMMUNICATION INSTITUTE, ALGERIA:

- **1982/83** Boolean Algebra and Digital Electronics

### M.Sc. GRADUATE PROGRAM, HIGH COMMISSION FOR RESEARCH, ALGERIA:

- **1983/84** Nonlinear Systems Analysis and Design  
Feedback Control Systems
- **1984/85** Nonlinear Systems Analysis and Design
- **1985/86** Feedback Control Systems  
Multivariable Control Theory
- **1986/87** Digital Control  
Multivariable Control Theory
- **1987/88** Advanced Topics in Control Systems  
Multivariable Control Theory

### EE DEPARTMENT, KFUPM:

Semester	Course
Fall 1988/89	EE 201 Electric Circuits EE 202 Network Theory

Spring 1988/89	EE 380 Control Engineering I EE 514 Detection & Estimation
Summer 1989	EE 481 Modeling & Simulation
Fall 1989/90	EE 201 Electric Circuits EE 380 Control Engineering I
Spring 1989/90	EE 380 Control Engineering I EE 615 Digital Filter Synthesis
Summer 1990	EE 360 Electric Energy Engineering
Fall 1990/91	EE 380 Control Engineering I EE 552 Optimal Control Theory & Applications
Spring 1990/91	EE 380 Control Engineering I EE 202 Network Theory
Summer 1991	EE 360 Electric Energy Engineering
Fall 1991/92	EE 202 Network Theory EE 406 Signal Processing
Spring 1991/92	EE 380 Control Engineering I EE 615 Digital Filter Synthesis
Fall 1992/93	EE 202 Network Theory EE 550 Introduction to Modern Control
Spring 1992/93	EE 202 Network Theory EE 380 Control Engineering I
Fall 1993/94	EE 202 Network Theory EE 552 Optimal Control Theory & Applications
Spring 1993/94	EE 522 Power System Transient & Dynamic Stability EE 550 Introduction to Modern Control
Fall 1994/95	EE 202 Network Theory EE 514 Detection and Estimation
Spring 1994/95	EE 522 Power System Transient & Dynamic Stability EE 614 Digital Signal Processing
Fall 1995/96	EE 380 Control Engineering I EE 552 Optimal Control Theory & Applications
Spring 1995/96	EE 409 Capstone Design Project EE 550 Introduction to Modern Control EE 552 Optimal Control Theory & Applications
Fall 1996/97	EE 202 Network Theory EE 409 Capstone Design Project EE 514 Detection & Estimation
Spring 1996/97	EE 380 Control Engineering I ( Two Lectures and Lab)
Fall 1997/98	EE 433 Applied Control Engineering EE 514 Detection and Estimation
Spring 1997/98	EE 207 Signals and Systems EE 433 Applied Control Engineering
Fall 1998/99	EE 207 Signals and Systems EE 315 Probabilistic methods in Electrical Engineering
Spring 1998/99	EE 433 Applied Control Engineering EE 550 Introduction to Modern Control
Fall 1999/2000	EE 380 Control Engineering I EE 514 Detection and Estimation
Spring 1999/2000	EE 433 Applied Control Engineering EE 614 Digital Signal Processing



**UNIVERSITY OF SHARJAH**

<b>Semester</b>	<b>Course Name</b>
Fall 2000	0402344 Random Signal Theory
Fall 2000	0402405 Instrumentation and measurements
Spring 2001	0402330 Feedback Control Systems
Spring 2001	0402331 Feedback Control Systems Laboratory
Fall 2001	0402342 Signals and Systems
Fall 2001	0402436 Applied Control Engineering
Spring 2002	0402330 Feedback Control Systems
Summer 2002	0402342 Signals and Systems
Fall 2002	0402330 Feedback Control Systems 0402436 Applied Control Engineering
Spring 2003	0402342 Signals and Systems 0402434 Digital Control Systems 0400100 Introduction to Engineering
Summer 2003	0402342 Signals and Systems
Fall 2003	0402342 Signals and Systems 0402436 Applied Control Engineering
Spring 2004	0402240 Signals and Systems 0402436 Applied Control Engineering 0402491 Senior Design Project 1
Summer 2004	0402240 Signals and Systems
Fall 2004	0402240 Signals and Systems
Spring 2005	0402436 Applied Control Engineering
Summer 2005	0402240 Signals and Systems
Fall 2005	0403100 Introduction to Electrical and Computer Engineering 0402434 Digital Control Systems
Spring 2006	0403100 Introduction to Electrical and Computer Engineering 0402530 Linear Multivariable Control Systems
Summer 2006	0402 460 Special Topics in Electrical Engineering 0403 460 Special Topics in Computer Engineering
Fall 2006	0402330 Feedback Control Systems 0402436 Applied Control Engineering 0402491 Senior Design Project 1 0403100 Introduction to Electrical and Computer Engineering
Spring 2007	0402240 Signals and Systems 0402491 Senior Design Project 1 0402535/0403534 Neural Networks and Applications
Summer 2007	0402 460 Special Topics in Electrical Engineering 0403 460 Special Topics in Computer Engineering

Fall 2007	0402330 Feedback Control Systems 0402434 Digital Control Systems 0403100 Introduction to Electrical and Computer Eng. 0402491 Senior Design Project 1
Spring 2008	0402330 Feedback Control Systems 0402492 Senior Design Project 2 0403100 Introduction to Electrical and Computer Eng.
Fall 2008	0402330 Feedback Control Systems 0402436 Applied Control Engineering 0402530 Linear Multivariable Control Systems
Spring 2009	0402330 Feedback Control Systems 0402331 Feedback Control Systems Lab. 0405221 Engineering Probability and Statistics
Fall 2009	0403100 Introduction to Electrical and Computer Eng. 0402330 Feedback Control Systems 0402331 Feedback Control Systems Lab. 0402530 Linear Multivariable Control Systems
Spring 2010	0402241 Random Signal Theory 0402330 Feedback Control Systems 0402331 Feedback Control Systems Lab.
Fall 2010	0402330 Feedback Control Systems 0402331 Feedback Control Systems Lab. 0402542 Detection and Estimation
Spring 2011	0402330 Feedback Control Systems 0402331 Feedback Control Systems Lab. 0402240 Signals and Systems 0402203 Circuit Analysis 1 Lab.
Fall 2011	0403300 Professional, Social and Ethical Issues in Engineering 0402330 Feedback Control Systems 0402331 Feedback Control Systems Lab. 0402530 Linear Multivariable Control Systems
Spring 2012	0402330 Feedback Control Systems 0402331 Feedback Control Systems Lab. 0402240 Signals and Systems
Summer 2012	0402240 Signals and Systems

## VII. LABORATORY DEVELOPMENT

1. Set up a new Research and Development Instrumentation and Control Department (Equipments, Research groups and R&D activities), High Commission for Research, Algeria.
2. Set up new control laboratory (Design of experiments and equipment selection) High Commission for Research, Algeria, for:
  - Nonlinear Control Experiments.
  - Digital Control and sampled data systems experiments.
  - Linear servo mechanism experiments.

3. Set up some experiments with new equipment for EE 481 course.
4. Prepared new EE 380 Laboratory Manual with New Experiments.
5. Prepared new experiments for EE 433 lab.
6. Prepared a comprehensive purchase order of equipment for control courses.
7. Developed a new lab course on Multimedia.

## VIII. COURSE DEVELOPMENT

1. Proposed the following approved courses for the Graduate Program, High Commission for Research, Algeria:
  - Multivariable Control Theory
  - Linear Feedback Systems
  - Digital Control
  - Nonlinear Systems
  - Advanced Control Theory
2. Proposed Courses for two years graduate program in Signal Processing and Applications to National Institute of Engineers, Algeria.
3. Improved and updated the contents of three graduate courses in Control and Signal Processing, EE Department, KFUPM.
4. Actively participated in revision of both under-graduate and graduate curricula for the EE Department, KFUPM.
5. Proposed the following courses for the new curricula:
  - Under Graduate***
    - Applied Control Engineering
    - Industrial Instrumentation.
    - Signals and Systems.
    - Probabilistic Methods in Electrical Engineering.
  - Graduate***
    - Optimal Control.
    - Robust Control.
    - Large Scale Systems Modeling and Control.
    - Predictive Control.
    - Nonlinear Control.
6. Let the development of two new Master of Science Graduate Programs in Electrical and Computer Engineering, University of Sharjah.
7. Let the development of two new Bachelor of Science Programs in Sustainable and Renewable Energy Engineering and Nuclear Science and Engineering, UOS.

## IX. Ph.D. AND MS THESES

### A. As a Thesis Supervisor

- **M.Sc. in Instrumentation and Control, High Commission for Research, Algeria.**

- [TH1] Student Name: Ismail Mansouri  
Thesis Title: Control of a CANDU Nuclear Power Plant by Output Feedback.
- [TH2] Student Name: Ahmed Moughari  
Thesis Title: Implementation of a 3-Dimensional Code for Reactor Physics.
- [TH3] Student Name: Mohammed Meghraoui  
Thesis Title: Automatic Servomechanism control of solar cells for maximum Power transfer.
- [TH4] Student Name: Abdelaziz Gacem  
Thesis Title: Microprocessor Control of an electronic converter for Solar Applications.
- [TH5] Student Name: Said Djennoune  
Thesis Title: Decomposition of Large Scale Systems and Composite Control with Application to Nuclear Reactors.
- [TH6] Student Name: Amar Bounemri  
Thesis Title: Model Reduction and Suboptimal Control via Balancing and Aggregation.
- [TH7] Student Name: Said Menacer  
Thesis Title: Design of Computer Control Rooms for Safe Operation of Nuclear Reactors.

- **Ph.D and M.Sc. in Electrical Engineering, KFUPM.**

- [TH8] Student Name: Fathi A. Abu Al-Saud  
Thesis Title: Design of State Feedback Control laws based on reduced order models. (M. Sc. 1990)
- [TH9] Student Name: Ismail M. Al-Farra  
Thesis Title: Spectral Estimation based on SVD techniques. (M. Sc. 1990)
- [TH10] Student Name: Ali Al-Ahmadi  
Thesis Title: Digital Filter Design by Approx. Time-Domain Modeling. (M.Sc. 1994)
- [TH11] Student Name: A. Zerguine  
Thesis Title: Adaptive Echo cancellation (Ph. D., 1996, local supervisor)

- [TH12] Student Name: Haitham Al-Tayyar  
Thesis Title: Measures of large scale systems interconnection (M.Sc. 1997)
- [TH13] Student Name: Tareq Naffouri  
Thesis Title: Nonlinear Identification via high order cumulants (M.Sc. 1997)
- [TH14] Student Name: Shaikh U.A. Qidwai  
Thesis Title: Estimation and filtering of Power Systems Harmonics (M.Sc. 1997)
- [TH15] Student Name: Mohammed Abdul Quader  
Thesis Title: Coordinated Control of Parallel Generators (M.Sc. in Progress)
- [TH16] Student Name: Lhouari Ghouti  
Thesis Title: Defect Identification using High order statistics (M.Sc. 1997)
- [TH17] Student Name: Abdul Quddus  
Thesis Title: Time weighted optimal control of power systems (M.Sc. 1997)
- [TH18] Student Name: Luay Al-Awami  
Thesis Title: Model-Based Controller design for a continuous pulping reactor (M.Sc. 1997).
- [TH19] Student Name: Ahmar Shafi  
Thesis Title: Neural Network based Lattice Feedback Equalization. (M.Sc. 1998).
- [TH20] Student Name: Azhar Quddus  
Thesis Title: Curvature Analysis Using Multiresolution Techniques. (Ph. D. 1998, Co-Advisor).
- [TH21] Student Name: Mian Zainulabadin Khurrum  
Thesis Title: Fractionally Spaced Decision Feedback Equalizer using Mixed Norms. (M.Sc. 2000).
- [TH22] Student Name: Shafaat Abrar  
Thesis Title: Blind Equalization Using Neural Networks. (M.Sc. 2000).
- [TH23] Student Name: Kashif Mahmood  
Thesis Title: Neural Network based Equalization. (M.Sc. 2000).

- **Ph.D and M.Sc. in Automatic Control/Signal Processing.**

- [TH24] Student Name: SI-AMMOUR Amar  
Thesis Title: Contribution à la commande des systèmes dynamiques par

modes glissants d'ordre 2 et plus.  
(Ph. D., Algeria, 2006-2011).

- [TH25] Student Name: DJAMAH Tounsia  
Thesis Title: Identification des systèmes par des modèles d'ordre non entier.  
(Ph. D., Algeria, 2005-2010).
- [TH26] Student Name: GUERMAH Saïd  
Thesis Title: Commande CRONE: Application à un procédé pilote de laboratoire.  
(Ph. D., Algeria, 2006-2011).
- [TH27] Student Name: MANSOURI Rachid  
Thesis Title: Contribution à l'analyse et à la synthèse des systèmes d'ordre fractionnaire par la représentation d'état.  
(Ph. D., Algeria, 2004-2008).
- [TH28] Student Name: ALMANSBA Farida  
Thesis Title: Identification des chaos et commande des systèmes non linéaires chaotiques.  
(M.Sc., Algeria, 2006-2007).
- [TH29] Student Name: DJAGHALI Nadia  
Thesis Title: Commande par modes glissants des systèmes à retard.  
(M.Sc., Algeria, 2006-2007).
- [TH30] Student Name: NECHAK Lyes  
Thesis Title: Réduction et commande des systèmes polynomiaux.  
(M.Sc., Algeria, 2006-2007).
- [TH31] Student Name: BOUDJEDAIMI Madjid  
Thesis Title: Commande d'un onduleur par des approches basées sur des réseaux de neurones artificiels.  
(M.Sc., Algeria, 2007-2008).
- [TH32] Student Name: YOUSFI Safia  
Thesis Title: Développement d'algorithmes pour la commande H-infini des systèmes non linéaires : application à un procédé industriel.  
(M.Sc., Algeria, 2007-2008).
- [TH33] Student Name: Reem Izzeldin Salim  
Thesis Title: Optimal Model Reduction using Genetic Algorithms and Partical Swarm Optimization.  
(M.Sc., University of Sharjah, 2007-2009).
- [TH34] Student Name: Muhammad Ali S. M. Al-Radhawi  
Thesis Title: Decentralized Networked Control Systems: Control and Estimation over Lossy Channels.  
(M.Sc., University of Sharjah, 2009-2010).
- [TH35] Student Name: Nouara Cherifi

Thesis Title: Identification of Nonlinear Dynamical Systems with Polynomial Models.  
(Ph. D., Algeria, 2008-2012).

[TH36] Student Name: Slami Saadi  
Thesis Title: Optimal Image Restoration Using Soft Computing Based on: Particle Swarm, Ant Colony and Bacterial Foraging Optimization Algorithms: Comparaison study with NN, FL and GA for Nuclear Imaging Applications.  
(Ph. D., Algeria, 2008-2012).

[TH 37] Student Name: Lysa Ait Messaoud  
Thesis Title: Approximation optimale de la norme p en utilisant les algorithmes évolutionnaires (AGs, OEP, Colonie de fourmis): Application à la réduction de modèle et la synthèse des régulateurs et des filtres fractionnaires.  
(Ph. D., Algeria, 2009-2013).

[TH 38] Student Name: Mhamed Helaimi  
Thesis Title: Advanced Control System Design of Resonant Inverters for Induction Heating.  
(Ph. D., Algeria, 2009-2013).

[TH 39] Student Name: Samir Sadou  
Thesis Title: Une Nouvelle approche de compression de données.  
(Ph. D., Algeria, 2009-2013).

[TH 40] Student Name: Mahmoud Nabag  
Thesis Title: Dynamic Modeling and Advanced Control of Hybrid Fuel Cell based Systems.  
(M.Sc., University of Sharjah, 2011-2012).

[TH 41] Student Name: Afaf Gaid  
Thesis Title: Nonlinear Control for the Maximum Power Point Tracking (MPPT) of Photovoltaic Systems.  
(M.Sc., University of Sharjah, 2013-2014).

[TH 42] Student Name: Hanneen M. Salih  
Thesis Title: Optimal Energy Management and Control of Hybrid Renewable Energy Systems using Soft Computing Techniques.  
(M.Sc., University of Sharjah, 2011-2012).

[TH 43] Student Name: Fatima Cheballah  
Thesis Title: Contribution à la commande et l'observation des systèmes d'ordre non entier.  
(Ph. D., Algeria, 2010-2014).

[TH 44] Student Name: Chafea Haddad  
Thesis Title: Commande Non linéaire Robuste Décentralisée des Systèmes Contrôlés en

Réseaux.  
(Ph. D., Algeria, 2010-2014).

## **B. As a Committee Member**

- **M.Sc. in Instrumentation and Control, High Commission for Research, Algeria.**

Participated in over thirty (30) M.Sc. Thesis committee in Control Theory, Signal Processing, Electronics, Reactor Physics and Solar Applications.

- **Ph.D. and M.Sc. in Electrical Engineering, KFUPM**

1. Student Name: Taisir H. Ismail.  
Thesis Title: Null steering in Phased and Adaptive Arrays by controlling the element positions (Ph.D).
2. Student Name: Mahdi Y. Zaidan  
Thesis Title: Design of Voiceband Echo Cancellers (M.Sc.).
3. Student Name: A. Zerguine  
Thesis Title: Design of Fractionally Spaced Equalizers (M.Sc.).
4. Student Name: U.A. Baroudi  
Thesis Title: Performance of Fractionally-Spaced Equalizer under Frequency selective Fading (M.Sc.)
5. Student Name: Hussain N. Al-Dawaish  
Thesis Title:  $H_\infty$ /LTR Design Techniques for Discrete Time Systems (M.Sc.).
6. Student Name: Hasan A. Sumait  
Thesis Title: Model Reduction and Dynamic Equivalentents for Electric Power Systems (M.Sc.).
7. Student Name: Wael Hasan A. Shehadah  
Thesis Title: New Digital Noncoherent FSK Receiver using Digital Frequency Locked Loop (M.Sc.)
8. Student Name: Mufeed Al-Ghumgham  
Thesis Title: On a Neutral Network-based Faults Detection Algorithm (M.Sc., S.E)
9. Student Name: Asjad Mumtaz Tahir Khan  
Thesis Title: VLSI Implementation of Petri Net Models of a class of Digital Systems (M.Sc.).
10. Student Name: Mohammad Wasim Akhtar  
Thesis Title: Towards an Optimal Accumulator size for the Hough Transform (M.Sc.)
11. Student Name: Mohammad Shahed Akhtar



Thesis Title: Performance of Multistage Interconnection Networks Under Non-uniform Reference Model (M.Sc.)

12. Student Name: Abdulaziz Al-Shuaibi

Thesis Title: Numerical Inversion of Laplace Transform (Ph.D.)

13. Student Name: Wassim Baroudi

Thesis Title:  $F_\infty$  control and Optimization (M.Sc.)

14. Student Name: Samir Al-Amer

Thesis Title: Closed loop Model Reduction (Ph.D)

15. Student Name: A. Khan

Thesis Title: Fourier Descriptor Approach for NDT (M.Sc.)

16. Student Name: Khaled Al-Sehli

Thesis Title: Neural Network Approach to Input-State Feedback Linearization (M.Sc.)

17. Student Name: Jibril Odogba

Thesis Title: Applications of  $H_\infty$  Optimization Techniques in Image and Signal Processing (M.Sc.)

18. Student Name: Q. Al-Lawati

Thesis Title: Power Wheeling rates in Electric Systems (M.Sc. 1997)

19. Student Name: I.M. Arafah

Thesis Title: Power Systems Harmonics Estimation Using Artificial Neural Networks (M.Sc. 1997)

20. Student Name: Osama Abdl-Wahhab Ahmed

Thesis Title: New Joint Time-Frequency Transforms with Improved Properties (Ph.D., 1998).

- **Ph.D. External examiner**

21. Student Name: Omran El-Hadi Murad

Thesis Title: Modelling and Linear Quadratic Gaussian Control of Idle Speed System for a Spark - Ignition Engine, (Ph.D. Malaysia, External Examiner , 1998).

22. Student Name: Siti Fatimah Hj. Siraj

Thesis Title: "Modelling and Simulation of Load Frequency Control" (Ph.D. Malaysia , External Examiner , 1999).

23. Student Name: Smail Manani

Thesis Title: "Automatic tuning of multivariable Controllers" (Ph.D. Finland, External Examiner , 2001).

24. Student Name: Said Drid

Thesis Title: "Contribution to the modeling and robust control of induction machine" (Ph.D. Algeria, External Examiner , 2006).

## **X. TEACHING SHORT COURSES**

1. Non-Destructive Testing of Materials by Ultrasound, May 1990.
2. Control Systems: Design, Simulation and Implementation, May 1993.
3. Programmable Controllers, April 1992.
4. Introduction to Digital Communications, May 1993
5. Programmable logic Controllers Applications, November 1993.
6. Electrical Engineering for all Engineers, December 1994.
7. State of the Art of Nondestructive Testing of Materials, 1995.
8. Programmable Logic Controllers Applications, March 1996.
9. Digital Signal Processing, April 1996.
10. Telecommunication, December 1996.
11. Programmable Logic Controllers, May 1998.
12. Introduction to Wavelet theory and Applications, Helsinki University of Technology, Finland, August 2001.

## **XI. SELECTED COMMITTEES**

### ***A. High Commission for Research, Algeria***

- 1983/84 Research Activities Committee (Chairman)  
Laboratory Development Committee (Member)
- 1984/85 Research Activities Committee (Chairman)  
Exams Committee for Graduate Program Admission (Member)  
Nuclear Reactor Selection Committee (Member)
- 1985/86 Graduate Program Committee (Chairman)  
Research Evaluation Committee (Chairman)  
Promotion Committee (Member)
- 1986/87 Industrial Development Committee (Chairman)  
Nuclear Safety Committee (Member)
- 1987/88 Research Evaluation Committee (Member)  
Graduate Student Selection Committee (Chairman)  
Evaluation Committee for Universities and  
Industries Projects (Member)

### ***B. Departmental Committees, KFUPM***

- 1988/89 Graduate Admission Committee (Member)  
Entrance Exam Committee (Member)
- 1989/90 Graduate Admission Committee (Member)  
Entrance Exam Committee (Member)
- 1990/91 Graduate Admission Committee (Member)  
Investigation Committee for Probation Students  
Committee for Development of new EE 380 Experiments (Coordinator)
- 1991/92 Graduate Admission Committee (Member)  
Curriculum Committee (Chairman)  
Subcommittee for ABET Evaluation (Coordinator)
- 1992/93 Graduate Admission Committee (Member)  
Curriculum Committee (Member)  
Subcommittee for ABET Evaluation (Coordinator)
- 1993/94 Planning Committee (Chairman)  
Curriculum committee (Member)  
Search Committee (Coordinator)
- 1994/95 Planning Committee (Chairman)  
Curriculum Committee (Member)  
Search Committee (Coordinator)  
Sub-Committee for University-Industry Link (Member)
- 1995/96 Planning Committee (Chairman)  
Curriculum Committee (Member)  
Search Committee (Coordinator)
- 1996/97 Planning Committee (Chairman)  
Curriculum Committee (Member)  
Search Committee (Member)
- 1997/98 Planning Committee (Chairman)  
Curriculum Committee (Member)  
Search Committee (Member)
- 1998/99 Planning Committee (Chairman)  
Graduate Program Committee (Member)  
Revised Promotion Guidelines Committee (Chairman)  
SE Program Evaluation Committee (Chairman)  
6<sup>th</sup> IEEE Exchange Meeting Technical Committee (Member)  
6<sup>th</sup> IEEE Exchange Meeting Publication Committee (Member)
- 1999/2000 Planning Committee (Chairman)  
Graduate Program Committee (Member)  
6<sup>th</sup> IEEE Exchange Meeting Technical Committee (Member)

***C. College Committees, KFUPM***

- 1989/90 Committee for the evaluation of North African Degrees  
(College of Graduate Studies) (Member)
- 1992/93 Committee for preparation of new evaluation form (Chairman)  
Distinguished Teacher Award Committee (Member)
- 1993/94 Students evaluation Committee (Chairman)
- 1998/99 Inter-disciplinary Group For Mechatronics (Chairman)

***D. University Committee, KFUPM***

- 1991/92 Housing Sub-committee (member)  
Internal Review Committee, ABET (member)
- 1993/94 Research Committee (Member)  
Sub-committee for Research Projects (member)  
Sub-committee on Professional Relationships (member)  
Ad hoc Committee for Career day (member)
- 1994/95 Research Committee (Member)  
AdHoc Committee for ABET Evaluation of KFUPM  
Graduate Program (member)  
AdHoc Committee for Excellence in Research Award  
AdHoc Committee for Mini Symposium on  
Optimization (member)  
Sub-committee for conference attendance (member)
- 1995/96 Library Committee (member)  
Sub-committee for Library Acquisition (member)  
Ad hoc Committee for Mini-symposium on Modeling  
and Simulation (member)
- 1996/97 Faculty Affairs Committee (Member)  
Ad Hoc Committee for Evaluation of College of Science  
Program (Member)  
Ad Hoc Committee for Projection of University  
Graduate needs for next 10 years (Member)  
Ad hoc Committee for preparation of UCB visit for  
evaluation of College of Science Program (Chairman)  
Ad hoc Sub-committee for faculty evaluation (Member)
- 1997/98 Research Committee (Member)  
Sub-committee for Research Projects (Member)  
Sub-committee for RI promotion guidelines (Member)
- 1998/99 Research Institute Strategic Planning Committee (Member)

**UNIVERSITY OF SHARJAH**

Position	Type	Level
C: Chairman M: Member	P: Permanent S: Special	U: Univ. C: College D: Dept.

### Year 2000/2001

Committee Name	Position	Type	Level	Number of Members
Research Committee	M	P	C	7
Teaching Committee	C	P	C	8
Safety Committee	M	P	C	5
Staffing Committee	C	P	D	5
Curriculum Committee	M	P	D	5
Program Advisory Committee	M	P	C	6
College Board	M	P	C	7
Graduate Program Committee	C	S	D	4
Graduate studies and research Committee	M	P	C	5
Undergraduate Education Committee	M	P	C	5

### Year 2001/2002

Committee Name	Position	Type	Level	Number of Members
Undergraduate Education Committee	Attend Meetings	P	D	5
University Promotion Committee	M	P	U	8
University Promotion Sub Committee	M	P	U	3
College Promotion Committee	M	P	C	5
Staffing Committee	C	P	D	4
Undergraduate Accreditation Committee	Attend Meetings	P	D	4
Program Advisory Committee	M	P	C	6
College Board	M	P	C	6
Graduate studies & research Committee	Attend Meetings	P	D	5

### Year 2002/2003

Committee Name	Position	Type	Level	Number of Members
University Promotion Committee	M	P	U	8
University Promotion Sub Committee	M	P	U	3
Graduate studies and research Committee	C	P	C	6
Undergraduate Education Committee	M	P	C	6
Staffing Committee	M	P	D	3
Undergraduate Accreditation Committee	M	P	D	7
Program Advisory Committee	M	P	C	10
College Board	M	P	C	6
Graduate studies & research Committee	M	P	D	5
Faculty & Staff Grievance Committee	M	S	C	3
Undergraduate Education Committee	M	P	D	6
Department Seminars	Coordinator	P	D	2
University Mission & Vision Committee	C	S	U	10
Task Force Committee for EE Accreditation Visit	C	S	D	7
ICECS 2003 Technical Program	C	S	U	8
Specialty Groups( Three )	M	S	D	10

#### Year 2003/2004

Committee Name	Position	Type	Level	Number of Members
University Research Board	M	P	U	11
Planning and Development Committee	M	P	U	8
Graduate Studies Council	M	P	U	6
Conferences and Symposia Committee	M	P	U	8
Graduate studies and research Committee	C	P	C	6
Undergraduate Education Committee	M	P	C	7

Staffing Committee	M	P	D	3
Assessment & Continuous Program Improvement Committee	M	P	D	7
College Board	M	P	C	6
Graduate studies & research Committee	M	P	D	5
Faculty & Staff Grievance Committee	M	S	C	3
Undergraduate Education Committee	M	P	D	6
Department Seminars	Coordinator	P	D	2
Task Force Committee for EE Accreditation Visit	C	S	D	7
ICECS 2003 Technical Program	C	S	U	8
Specialty Groups( Three )	M	S	D	10
Advisory Committee, Third Engineering Forum	M	S	C	4

**Year 2004/2005**

No.	Activity	Duties	Date	
			From	To
1	University Research Board	Member	Fall	Spring
2	Planning and Development Committee	Member	Fall	Spring
3	Graduate Studies Council	Member	Fall	Spring
4	Degree Equivalence and Rank Committee	Member	Fall	Spring
5	University Promotion Committee	Member	December	September
6	University Faculty Evaluation Committee	Member	Fall	Spring
7	University Faculty Recruitment Committee	Member	Fall	Spring
8	University Course Requirement Committee	Member	Fall	Spring
9	IT Awareness for Year 2005 Committee	Chairman	Spring	Fall
10	Specialty Groups (Three)	Member	Fall	Spring
11	EMBA Executive committee	Member	Fall	Spring

No.	Activity	Duties	Date	
			From	To
12	Assisted in several Department activities		Fall	Spring
13	Several Ad hoc Committees formed by the Chancellor	Member	Fall	Spring

### Year 2005/2006

No.	Activity	Duties	Date	
			From	To
1	University Research Board	Member	Fall	Spring
2	Planning and Development Committee	Member	Fall	Spring
3	Graduate Studies Council	Member	Fall	Spring
4	Degree Equivalence and Rank Committee	Member	Fall	Spring
5	University Promotion Committee	Member	December	September
6	University Faculty Evaluation Committee	Member	Fall	Spring
7	University Faculty Recruitment Committee	Member	Fall	Spring
8	University Course Requirement Committee	Member	Fall	Spring
9	IT Awareness for Year 2005 Committee	Chairman	Spring	Fall
10	Specialty Groups (Three)	Member	Fall	Spring
11	EMBA Executive committee	Member	Fall	Spring
12	Assisted in several Department activities		Fall	Spring
13	Several Ad hoc Committees formed by the Chancellor	Member	Fall	Spring
14	Research and Studies Center Council	Chair	Fall	spring
15	College of Engineering Advisory Committee	Member	Spring	
16	Advisor to Chancellor	Advisor	Fall	Spring
17	Research and Studies Center	Director	Fall	Spring
18	Department Promotion Committees	Chair	Fall	Spring
19	College Promotion Committees	Member	Fall	Spring
20	University Awards Committee	Chair	Spring	
21	University Bonus Committee	Chair	Spring	
22	A large number of other occasional activities	Member or Chair	Fall	Spring



**Year 2006/2007**

No.	Activity	Duties	Date	
			From	To
1	College of Engineering Council	Member	Fall	Spring
2	College of Engineering Advisory Committee	Member	Fall	Spring
3	College Strategic Planning Committee	Member	Fall	Spring
4	College Research and Scholarship Committee	Member	Fall	Spring
5	University Graduate Studies Council	Member	Fall	Spring
6	University Promotion Committee	Member	Fall	Spring
7	University Faculty Evaluation Committee	Member	Fall	Spring
8	University Faculty Recruitment Committee	Member	Fall	Spring
9	Specialty Groups (Three)	Member	Fall	Spring
10	Department Teaching and Learning Committee	Member	Fall	Spring
11	Department Research and Scholarship Committee	Member	Fall	Spring
12	Department Advisory Committee	Member	Fall	Spring
13	Assisted in several Department activities		Fall	Spring
14	Several Ad hoc Committees formed by the Chancellor	Member	Fall	Spring
15	A large number of other occasional activities	Member or Chair	Fall	Spring

**Year 2007/2008**

No.	Activity	Duties	Date	
			From	To
1	College of Engineering Council	Member	Fall	Spring
2	College Research and Scholarship Committee	Advisor	Fall	Spring
3	University Research Board	Member	Fall	Spring
4	University Promotion Committee	Member	Fall	Spring
5	University Faculty Evaluation and Recruitment Committee	Member	Fall	Spring
6	University Journal of Pure & Applied Sciences	Editor-in-Chief	Fall	Spring
7	Specialty Groups (Two)	Member/Chair	Fall	Spring
8	Department Teaching and Learning Committee	Member	Fall	Spring

No.	Activity	Duties	Date	
			From	To
9	Department Research and Scholarship Committee	Member	Fall	Spring
10	Department Advisory Committee	Member	Fall	Spring
11	Assisted in several Department activities		Fall	Spring
12	Several Ad hoc Committees formed by the Chancellor	Member	Fall	Spring
13	A large number of other occasional activities	Member or Chair	Fall	Spring

### Year 2008/2009

No.	Activity	Duties	Date	
			From	To
1	College Advisory Committee	Member	Fall	Spring
2	College Committee for B. Sc. new program on Renewable Energies	Chair	Fall	
3	University Committee for two B. Sc. new programs on Renewable Energies and Nuclear Engineering	Chair		Spring
4	University Promotion Committee	Member	Fall	Spring
5	University Faculty Evaluation and Recruitment Committee	Member	Fall	Spring
6	College Committee for Preparation of ABET Accreditation	Member		Spring
7	University Journal of Pure & Applied Sciences	Editor-in-Chief	Fall	Spring
8	Specialty Groups (Two)	Member/Chair	Fall	Spring
9	Department Research and Scholarship Committee	Member	Fall	Spring
10	Staffing Committee for Industrial Engineering and Management	Member	Fall	Spring
11	Assisted in several Department activities		Fall	Spring
12	Ad hoc Committees	Member	Fall	Spring
13	A large number of other occasional activities	Member or Chair	Fall	Spring

### Year 2009/2010

No.	Activity	Duties	Date	
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			<b>From</b>	<b>To</b>
<b>1</b>	College Advisory Committee	Member	Fall	Spring
<b>2</b>	College Committee for B. Sc. new program on Renewable Energies	Chair	Fall	
<b>3</b>	University Committee for two B. Sc. new programs on Renewable Energies and Nuclear Engineering	Chair		Spring
<b>4</b>	University Promotion Committee	Member	Fall	Spring
<b>5</b>	College Committee for Preparation of ABET Accreditation	Member		Spring
<b>6</b>	Specialty Groups (Two)	Member/Chair	Fall	Spring
<b>7</b>	Department Research and Scholarship Committee	Member	Fall	Spring
<b>8</b>	Staffing Committee for Renewable Energy and Nuclear Engineering	Chair	Fall	Spring
<b>9</b>	Assisted in several Department activities		Fall	Spring
<b>10</b>	Ad hoc Committees	Member	Fall	Spring
<b>11</b>	A large number of other occasional activities	Member or Chair	Fall	Spring

### Year 2010/2011

No.	Activity	Duties	Date	
			<b>From</b>	<b>To</b>
<b>1</b>	College Advisory Committee	Member	Fall	Spring
<b>2</b>	University Committee for B. Sc. new program in Mechanical Engineering	Member	Fall	Spring
<b>3</b>	University Committee for two B. Sc. new programs on Renewable Energies and Nuclear Engineering	Chair	Fall	Spring
<b>4</b>	University Promotion Committee	Member	Fall	Spring
<b>5</b>	College Committee for Preparation of ABET Accreditation	Member		Spring
<b>6</b>	Specialty Groups (Two)	Member/Chair	Fall	Spring
<b>7</b>	Department Research and Scholarship Committee	Member	Fall	Spring
<b>8</b>	Staffing Committee for Renewable Energy, Mechanical and Nuclear	Chair	Fall	Spring

No.	Activity	Duties	Date	
			From	To
	Engineering			
9	University Promotion Subcommittee	Chair	Fall	Spring
10	Assisted in several Department activities		Fall	Spring
11	Ad hoc Committees	Member	Fall	Spring
12	A large number of other occasional activities	Member or Chair	Fall	Spring

**Year 2011/2012**

No.	Activity	Duties	Date	
			From	To
1	College Advisory Committee	Member	Fall	Spring
2	Coordinated the preparation of Initial Accreditation Visit for the new B. Sc. Program: Nuclear Engineering.	Chair	Fall	Spring
3	Chaired the preparation of Initial Accreditation Documents for the new B. Sc. program: Nuclear Engineering.	Chair	Fall	Spring
4	Committee for the selection of research bonus award	Member		Spring
5	Contributed in the Development and preparation of Initial Accreditation Documents for the new B. Sc. Program: Mechanical Engineering.	Chair	Fall	Spring
6	Committee for Starting B. Sc. new program on Renewable and Sustainable Energy Engineering	Member	Fall	Spring
7	Committee for B. Sc. new program in Mechanical Engineering	Chair	Fall	Spring
8	University Promotion Committee	Member	Fall	Spring
9	University Promotion Subcommittee	Chair	Fall	Spring
10	Staffing Committee for Renewable Energy,	Chair	Fall	Spring

No.	Activity	Duties	Date	
			From	To
	Mechanical and Nuclear Engineering			
11	Specialty Groups (Two)	Member/Chair	Fall	Spring
12	Assisted in several Department activities		Fall	Spring
13	Ad hoc Committees	Member	Fall	Spring
14	A large number of other occasional activities	Member or Chair	Fall	Spring

## XII. SENIOR PROJECT SUPERVISION

1. Microprocessor P.I.D. Controller
2. Model Reduction via Balancing
3. Optimal Model Approximation
4. Control of stepping motors
5. Analysis and synthesis of speech via linear prediction
6. Design of a variable structure regulator
7. Fault detection Kalman Filter algorithm
8. State and Integral state feedback
9. Complementary rules for Ziegler-Nichols method for tuning P.I.D. Controllers
10. An S.V.D. based algorithm for Power Spectrum Estimation
11. Frequency Estimation methods
12. Implementation of an analog P.I.D. Controller
13. Realisation of a solar power supply
14. Digital Filter Design
15. Comparison between Aggregation and Balancing Methods
16. Realization of an electronic three term controller
17. FIR Filter Design via windowing: a comparative study
18. Realization of a function generator
19. Comparison of suboptimal Hankel Methods for system identification
20. Intelligent tuning of PID Controllers
21. Approximate models for transmission lines.
22. Comparison of high order (S-to-Z) Digitizing of Continuous - Time Filters.
23. PID controller Design via High Order Discretization.
24. Low Order Rational Approximation of Transmission Lines.
25. Comparison of several methods of System Identification.
26. Estimation of Time delays in Dynamic Processes.
27. Design Evaluation of Classical, Pole Placement and Optimal Control Methods.
28. Fault Detection using observers.
29. Design of a diesel Engine Speed Controller.
30. State Estimation of Electric Power Systems.
31. Multivariable Controller Design for Industrial Processes.
32. Sound Level Detector.
33. Ultrasonic Motion Detector.
34. Interactive User Friendly Image Acquisition and Processing Toolbox.
35. Water pressure Control Using PLC.
36. Implementation of Advanced Compression Techniques for Images.
37. Comparative study of PID tuning Techniques.
38. Car License Plate Recognition.

- 39. Design and Implementation of an ECG.
- 40. Wavelet-Based Finger Print Recognition.
- 41. Arabic Character Recognition using Neural Networks.

### **XIII. CO-OP REPORT ADVISING**

Supervised and advised over 30 Applied Electrical Engineering Students in their Cooperative Program with industry. These Industries include:

- Saudi ARAMCO.
- Al-Jubail Petrochemical Company (KEMYA).
- SCECO, FARAS Power Plant
- SCECO, Ghazlan Power Plant.
- SCECO Head Quarters.
- SAMAREC Refinery.
- SADAF.
- Al-Hadeed.
- LUCENT Technologies.

The cooperative work includes a large number of tasks and projects, among them:

- Engineering and Design.
- Distribution Network.
- Construction.
- Operation and Maintenance.
- Control of Power Plants.
- Transmission Lines.
- Distribution Substations.
- Electrification Plants.
- Cable fault localization.
- Power distribution.
- Load dispatch and Area Control Center.
- Protection Systems.
- Turbo Generators.
- Lighting Installations.
- Power Electronics.
- Motors Overhauling and diagnosis.
- Gas Turbine Control.
- Wireless Communications.

### **XIV. SUMMER TRAINING REPORT ADVISING**

Advised over 30 students for the summer training in various companies and industries. The training included the following areas:

- Telecommunications.
- Fiber Optics.
- Test equipment.
- Trouble Shooting.
- GSM communication systems.

- Instrumentation in refineries.
- Emergency Generators.
- Intercom System.
- Fire System.
- Heating , Ventilation and Air conditioning system.
- Telephone system.
- Maintenance of transformers.
- SCADA systems.

## **XV. SEMINARS**

### ***I) Seminars Presented at KFUPM:***

1. New Tools for System Identification, Model Simplification and filter design. EE Department, KFUPM, November 1988.
2. Signal Modeling Approaches to Spectrum Estimation. EE Department, KFUPM, December 1990.
3. Ingredients for the Approximation of Complex Systems in Engineering, EE Department, November, 1994.
4. Singular Value Decomposition: A powerful tool for Signal Processing, EE Department, May, 1995.
5. Spectral Analysis in Physics and Other Sciences, Physics Department, November, 1995.
6. Recent Success of the Use of High Order Statistics In Signal Processing, EE Department, December, 1995.
7. Spectral Analysis using FFT in Practice, Energy Resources Division, Research Institute, January 1996.
8. Recent Developments & Applications of High order Statistics in Engineering, SE Dept., 25 March, 1997.
9. Singular Value Decomposition Applications in Science and Engineering, Physics Dept., 19 October 1997.
10. Fault Detection and Diagnosis in Industrial Processes, EE Dept., 2 December 1997.
11. A Journey on Matrix Approximation and Applications, Math Dept., 15 December 1997.
12. Matrix Approximation and Complex Rational Approximations: Applications, Math Dept. Nov., 1998.
13. Mechatronics : State of the Art and Future Trends, EE Dept., May 1999.
14. Overview of Mechatronics Education Worldwide, EE Dept., April 2000.

### ***II) Presented two seminars as Distinguished Speaker, at Queensland University of Technology, Brisbane, Australia.***

1. New Approaches and Solutions to Problems in system Identification, Filter Design, Approximation and Spectrum estimation, 26 July, 1993.

2.  $H_\infty$  Norm Model Reduction of Linear Systems, 27 July, 1993.

***III) Presented two seminars as Guest Speaker, at University of Massachusetts Dartmouth , ECE Colloquia, USA.***

1.  $H_\infty$  Control Theory and Applications : Part I Theory.
2.  $H_\infty$  Control Theory and Applications : Part II Applications.

***IV) Internal Seminars Presented:***

1. Genetic Algorithms and application to Power Systems, February 1996.
  2. Introduction to Genetic Algorithms, March 1996.
  3. Overview of Clustering Algorithms: K-means and ISODATA, February 1996.
  4. Fault Detection and Diagnosis in Industrial Processes, 2 December 1997.
  5. Singular Value Decomposition application to Process Modeling, February 1998.
  6. Relative Gain Array for Process Controller Pairing, March 1998.
  7. Balanced Representation and Balanced Model Reduction, October 1993.
  8. Sub-Optimal and Optimal Hankel Approximation, November 1993.
  9.  $H_\infty$  Optimization and Model Reduction, March 1994.
  10. Linear Matrix Inequalities in Optimization and Model Reduction, May 1995.
  11.  $H_\infty$  Filtering and Estimation, June 1995.
  12. Singular Perturbation Model Reduction, November 1992.
- Delivered closed presentations to ARAMCO to pursue possible collaborations in Applied Research and Development projects. The topics were in Process Control, Fuzzy logic and Artificial Intelligent Control.

***V) 12 Seminars presented at University of Sharjah, 2000-2004.***

***VI) 4 Seminars presented at American University of Sharjah, 2002-2004.***

***VII) 2 Seminars presented at Helsinki University of Technology, Finland, August 2001.***

***VIII) 2 seminars presented at Darmstadt University of Technology, Germany, December 2004.***

***IX) 1 seminar presented for IEEE UAE Section, Dubai, 2004.***

***X) 4 seminars presented at University of Tizi Ouzou, Algeria, May-June 2005.***

***XI) 1 seminar presented at University of Batna, Algeria, June 2005.***

***XII) 7 Seminars presented at University of Sharjah, 2005-2008.***

***XIII) 4 seminars presented at atomic Energy Commission, Algeria, July 2007.***

***XIV) 2 seminars presented at University Technology, Malaysia, June 2008.***

***XV) 2 seminars presented at University of Tizi Ouzou, Algeria, June 2008.***



## **XVI. CONFERENCES ATTENDED**

- 17th IEEE Conference on Decision and Control, San Diego, California, U.S.A., January 1979
- Joint Automatic Control Conference, San Francisco, California, U.S.A., August 1980.
- 19th IEEE Conference on Decision and Control, Albuquerque, New Mexico, U.S.A., December 1980.
- International Conference on Mathematical Systems Theory, Los Angeles, California, U.S.A., April, 1981.
- Shell Oil Annual Conference, Houston, Texas, U.S.A., March 1982.
- Telecommunication Conference for African Countries, Algiers, Algeria, December 1982.
- National Conference on Applied Control Theory and Industrial Electronics, INH, Boumerdes, Algeria, May 1985.
- World Congress of International Federation of Automatic Control, Budapest, Hungary, July 1984.
- Mathematics Colloquium on Stability Theory, University of Algiers, U.S.T.H.B., April 1986.
- International Conference on Modelling and Simulation, Istanbul, Turkey, June 1988.
- First Saudi Symposium on Energy Utilization and Conservation, Jeddah, Saudi Arabia, March 1990.
- IEEE/IEE Gulf Digital Signal Processing Symposium, Kuwait, May 1990.
- Instrumentation and Control Workshop, RI, KFUPM, April 1992.
- World congress of International Federation of Automatic Control, Sydney, Australia, July, 1993.
- Tutorial Workshop "Convex Optimization Techniques in Robust Control", IEEE CDC, San Antonio, December, 1993.
- Tutorial Workshop "Case Studies and Methods for Combined Identification and Control", IEEE CDC, San Antonio, December, 1993.
- IEEE Conference on Decision and Control, San Antonio, December, 1993.
- The 1st Saudi IEEE Technical Exchange Meeting, "TEM '94, KFUPM, Dhahran, June, 1994.
- Second Saudi Symposium on Energy, Utilization and Conservation, KFUPM, Dhahran, 27-30, November, 1994.
- 1st KFUPM Mini Symposium on Optimization Theory and Applications, Dhahran, May 30, 1995.

- The Second Saudi IEEE Technical Exchange Meeting, TEM '95, KFUPM, Dhahran, June 6, 1995.
- European conference on Circuit Theory and Design ECCTD-95, Istanbul, Turkey, August 27-31, 1995.
- European Control Conference, Rome, Italy, September 5-8, 1995.
- Fourth Saudi Engineering Conference, Jeddah, KSA, November 5-8, 1995.
- 34TH IEEE Conference on Decision and Control, New Orleans, December 13-15, 1995.
- The Third Saudi IEEE Technical Exchange Meeting, KFUPM, Dhahran, June 1996.
- Genetic Algorithms in Engineering Systems: Innovations and Applications, GALESIA '97, Glasgow, UK, September 2-4, 1997.
- 1997 Process Automation Technical Exchange Meeting, Saudi ARAMCO, Dhahran, November 1997.
- Workshop on Recent Developments in Matrix Theory and Numerical Analysis, KFUPM, Dhahran, December 13-16, 1997.
- The Fourth Saudi IEEE Technical Exchange Meeting, KFUPM, Dhahran, May 1997.
- The Fifth Saudi IEEE Technical Exchange Meeting, KFUPM, Dhahran, April 1998.
- European Signal Processing Conference EUSIPCO'98, Rhodes, Greece, September 1998.
- The Sixth Saudi IEEE Technical Exchange Meeting, KFUPM, Dhahran, April 20-21, 1999.
- Quantitative Non-Destructive Evaluation Conference QNDE'99, Montreal, Canada, July 25-30, 1999.
- ICASSP, June 2000, Istanbul, Turkey.
- 7<sup>th</sup> Annual IEEE Technical Exchange Meeting, April 18-19, 2000, KFUPM, Dhahran, Saudi Arabia.
- First IEEE International Energy Conference, May 7-9, 2000, Al-Ain, UAE.
- Sharjah Solar Energy Conference, Feb. 2001, UOS, UAE.
- e-learning Forum, April 2001, HCT, Sharjah, UAE.
- 1<sup>st</sup> Engineering Education Forum, April 2001, UOS, Sharjah, UAE.
- Conference in Mathematical Analysis and Applications, May 2, 2001, American University of Sharjah, UAE.
- Arab Science and Technology Symposium, March 2002, UOS, Sharjah, UAE.
- 2<sup>nd</sup> Engineering Education Forum, May 2002, UOS, Sharjah, UAE..
- e-learning symposium, May 2002, Dubai, UAE.
- Participation in round table discussion on e-learning in Engineering education,

e-learning symposium, May 2002, Dubai, UAE.

- University City Conference, November 3, 2002, Sharjah, UAE.
- 3<sup>rd</sup> Arab Conference on Information Technology, December 15-19, 2002, Doha, Qatar.
- 3<sup>rd</sup> Engineering Education Forum, October 2003, UOS, Sharjah, UAE.
- 10th IEEE international Conference on Electronics, Circuits and Systems held in December 2003 at UOS.
  - UAE Math Day, American University of Sharjah, April, 2004.
  - 3<sup>rd</sup> IEEE International Conference on Systems, Signals and Devices, Tunisia, March 2005.
  - UAE Math Day 2005, UAE University, Al-Ain, April 7, 2005.
  - 1<sup>st</sup> Annual Scientific Research Forum at the University of Sharjah, May 14-15, 2005.
- 3<sup>rd</sup> international Summer School on Signal Processing and its Applications (ISSSPA06), June, 2006, Jijel, Algeria.
- 2<sup>nd</sup> IFAC Workshop on Fractional Differentiation and its Applications, Porto, Portugal , July 17-21, 2006.
- 2<sup>nd</sup> Annual Scientific Research Forum at the University of Sharjah, May 2-3, 2006.
- 4<sup>th</sup> International Forum on Engineering Education, University of Sharjah, Sharjah, UAE, April 25-27, 2006.
- ISSPA 2007, Sharjah, UAE, February 12-15, 2007.
- 2<sup>nd</sup> International Conference on Modelling, Simulation and Applied Optimization, ICMSAO'07, Abu Dhabi, UAE, 24-27 Mars 2007.
- 2007 IEEE International Symposium on Mechatronics and its Applications (ISMA07) held 26-29 March, 2007, Sharjah, United Arab Emirates (UAE).
- 4<sup>th</sup> International Summer School on Signal Processing and its Applications (ISSSPA07), June 30-July 4, 2007, Boumerdes, Algeria.

## XVI. AWARDS

Year	Award
1973-77	Granted scholarship for undergraduate studies abroad.
1977-80	Granted scholarship for graduate studies abroad.
1978-81	Granted Research Assistantship throughout graduate studies.
1991-92	Nominee for the Outstanding teacher Award from the Electrical Engineering Department.
1992-93	Nominated for the best distinguished research award, KFUPM.

1993-94	Best distinguished Research Award, KFUPM.
1995-96	Recognition Award for Outstanding services to the Electrical Engineering Department.
1995-96	Nominee for the Outstanding Advisor Award from the Electrical Engineering Department.
1996-97	Outstanding Advisor Award, KFUPM.
1998-99	Best distinguished Research Award, KFUPM.
May, 2002	Best Researcher Award for the Year 2001/2002, University of Sharjah, UAE.
May, 2004	Best Research Paper Award for the Year 2003/2004, University of Sharjah, UAE.
May, 2007	Best Researcher Award for the Year 2006/2007, University of Sharjah, UAE.
May, 2007	Best Research Project Award in 2006-2007, UOS, UAE.
May, 2007	Supervisor for the best student paper award in 2006-2007, UOS, UAE.
May, 2007	Supervisor for the best student project award in 2006-2007, UOS, UAE.
April 2008	Gold Medal, 36 <sup>th</sup> International Exhibition of Inventions, New Products and Techniques, 2-6 of April 2008, Geneva, Switzerland for the patent: Non-destructive portable sugar level measurement instrument with applications in food production and distribution industries.
May 2008	Best Researcher Award for the Year 2007/2008, University of Sharjah, UAE.
May 2010	Supervisor for the best M. Sc. Thesis award in 2009-2010, UOS, UAE.
May 2011	Best Researcher Award for the Year 2010/2011, University of Sharjah, UAE.
May 2012	Best Teacher Award for the Year 2011/2012, University of Sharjah, UAE.

## XVII. ANNUAL KFUPM EVALUATION

Year	Evaluation
1988-89	Excellent
1989-90	Outstanding
1990-91	Outstanding
1991-92	Outstanding
1992-93	Outstanding
1993-94	Outstanding
1994-95	Outstanding
1995-96	Outstanding
1996-97	Outstanding
1997-99	Outstanding

## **XVIII. CONSULTANCY / INDUSTRIAL EXPERIENCE**

- Expert consultant to SAMAREC (via R.I.) for the upgrading of Instrumentation and computer control of Refinery at Yanbu (1989-90)
- Consultant for the preparation of training program on Programmable logic controllers for HADEED, Al-Jubail, 1995-96.
  
- Developed a signal processing algorithm for the deconvolution of earth structure in Gas and Oil exploration (SHELL Oil Development Center, Houston, Texas, USA).
- Designed and implemented control strategies for Research Nuclear Reactor.
- Developed Advanced process control software for the process industries.
- Evaluated and selected new instrumentation and DCS for a Refinery.
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- Developed a fault Detection and Diagnosis system for petrochemical plants.
- Developed a cost-effective automated system for Ultrasonic Nondestructive defect identification.
- Participated in various training programs and training in control and instrumentation for process industry

## **XIX. MISCELLANEOUS**

- Set up a new Research and Development Instrumentation and Control Department (Research groups, R&D activities and equipment), High Commission for Research, Algeria.
- Initiated and directed various projects in instrumentation and measurement, electronics and microprocessor applications to Nuclear and Solar systems, High Commission for Research, Algeria.
- Responsible for the evaluation and control of R&D activities in Instrumentation and Control, High Commission for Research, Algeria.
- Coordinator of a technical team for the maintenance and equipment innovation of Industrial plants (Textile, Petrochemical), High Commission for Research/Industry organizations, Algeria.
- Worked with different standards (IEC, IEEE, ANSI, ISO, AFNOR & VDE) in the design and testing of electronic and computer systems and Nuclear Instrumentation, High Commission for Research, Algeria.
- Organized and presented various seminars in Instrumentation and Control, High Commission for Research, Algeria.

- Technical Editor on Special Issue "Control Theory and Applications", for AJSE, 1993-94.
- Member of the Organizing Committee for the 1st KFUPM, Mini symposium on Optimization Theory and Applications, 1994-95.
- Chairman of Session III in 1st KFUPM Mini symposium on Optimization Theory and Applications, May 30, 1995.
- Attended a Course on Good Evaluation: "A Critical Part of Good Teaching", Nov., 23-27, 1991, KFUPM.
- Attended a Course on "The Dynamics of Teaching Excellence", May 9-12, 1992, KFUPM
- Attended a Course on "Motivating Students to Learn", October 9-13, 1993, KFUPM.
- Participated on a Round Table in "Short Course on Effective College Teaching", Feb.15, 1993, KFUPM.
- Member of the Organizing Committee for the 2nd KFUPM Mini Symposium on Computer Simulation and Applications, May 21, 1996.
- SABIC funded project [FP17] was ranked 1<sup>st</sup> among all submitted proposals (23) at KFUPM for the year 1997-98.
- Acknowledged in several journal papers for my contributions.
- Received over 100 requests for several of my papers.
- Chaired a session in Education Forum organized at UOS, April 2001.
- Participated in organization of Education Forums in 2001 and 2002.
- Member of Advisory Committee of Education Forums in 2001 and 2002.
- Invited to give plenary talk in workshop at American University of Sharjah.
- Invited several times to chair sessions in conferences and participate in invited papers.
- Invited to be member of panel on Information technology at symposium organized by Arabs Science and Technology Foundation, March 24-27, 2002.
- Participated at juror in UAE IT Challenge, February-March, 2002.
- Technical program Chair for the 10th IEEE international Conference on Electronics, Circuits and Systems held in December 2003 at UOS.
- Serve as External examiner for B.Sc. program at University of Malaya, Malaysia for 2001-03.
- Participate in IEEE UAE Activities.

- Operated weekly department seminar inviting speakers from department as well as from outside the University.
- Granted award to organize IEEE international conference in December 2003 at UOS.
- Reviewed several papers for international journals and conferences.
- Invited to be keynote speaker at IT Education conference, Veesa University of Applied Sciences, Finland, August 19-23, 2002.
- Invited as visiting Professor to Helsinki University of Technology, Summer 2002, to deliver research seminars, workshop and participate in research.
- Delivered a 3 credits short course to graduate students on Wavelets theory and Applications, Helsinki University of Technology, in August 2001.
- Initiated a weekly research seminar in Department.
- Initiated the Signals & Systems research group in the Department.
- Proposed and instituted with colleagues the Junior and Senior Design Projects procedures and organization.
- Involved several colleagues from the department in my research activities.
- Initiated preparation of research laboratory in Signal processing.
- Initiated proposals for two graduate(M. Sc.) programs in the department.
- Proposed a list of over 150 reference books for the graduate program, in the fields of Control, Signal Processing and Communications.
- Invited as External Promotion Committee Member by University of Malaya, Malaysia, 2002.
- Invited to be part of research team for European Universities Cooperative Project, 2002.
- Liaison Officer for Middle East, ISSPA 2003, July 1-4, Paris, France.
- Chaired University Committee for Preparation of Plan of Action for University of Sharjah IT year for 2002-03.
- Chaired University Committee for Preparation of University of Sharjah Mission and Vision, October 2002.
- Participated in preparing plan of action for Research Center, 2002-03.
- Chaired Session in ACIT 2002, December 15-19, Doha, Qatar.
- Technical Committee Member in ACIT 2002, December 15-19, Doha, Qatar.

- Contributed in the preparation of Accreditation documents and team visits.
- Member of International Program Committee of ICICS'2004, Dhahran, Saudi Arabia
- Member of Technical Program Committee of e-CETEM 2003, ARAMCO, KSA
- Member of Technical Program Committee of ICCIS 2004, Doha, Qatar.
- Member of Technical Program Committee of ISCCSP 2004, Tunisia.
- Invited to organize a special session at ISCCSP 2004, Tunisia.
- Invited by two Malaysian Universities to evaluate their B. Sc. Programs in Electrical and Computer Engineering.
- Invited to contribute to special issues in International Journals.
- Chaired 2 keynote speech sessions and co-chaired one at ICECS 2003.
- Chaired one session at ICECS 2003.
- International Steering Committee Chair for the 10th IEEE international Conference on Electronics, Circuits and Systems held in December 2003 at UOS.
- Acting General Chair and Technical Program Chair for the 10th IEEE international Conference on Electronics, Circuits and Systems, December 2003.
- International Steering Committee Member, IEEE international Conference on Electronics, Circuits and Systems, 2005, 2006, 2007 and 2008.
- Coordinator of Research Group: Intelligent Systems and Infrastructure(2004-Present)
- Member of Research Group: Ultrasonics and Applications(2006-Present)
- Conference Chair of the 2007 9<sup>th</sup> International Symposium on Signal Processing and its Applications, 12-15 February, 2007, Sharjah, United Arab Emirates.
- Technical Program Co-Chair of the 2007 IEEE International Symposium on Mechatronics and its Applications (ISMA07) held 26-29 March, 2007, Sharjah, United Arab Emirates (UAE).
- Organized the ISI research group workshop on Fractional Dynamic Systems and Applications, March 2007.
- Technical Program Co-Chair of the 2007 IEEE International Conference on Signal Processing and Communication (ICSPC07) to be held 24-27 November in Dubai, United Arab Emirates (UAE).
- Technical Program Co-Chair of the 4th International Summer School on Signal Processing and its Applications (ISSSPA07), June 30-July 4, 2007, Boumerdes, Algeria.
- Technical Program Co-Chair of the 5th International Summer School on Signal Processing and its Applications (ISSSPA08), June 18-19, 2008, KL, Malaysia.
- Conference Vice-Chair of ICM 2008, December 14-16, 2008, Sharjah, UAE.



- Technical Program Committee Member, IEEE Globecom 2008 Communications Software and Services Symposium.
- International Scientific Committee, First Mediterranean Conference on Intelligent Systems and Automation (**CISA'08**), June 30 - July 02, 2008, Annaba, Algeria.
- Technical Program Chair of the 2008 Workshop on Signal Processing and its Applications (WOSPA08), March 10-12, Sharjah, United Arab Emirates (UAE).
- Chair of University Strategic Planning Committee for Research, 2007/2008.
- Organizing 2 workshops on Strategic Planning for all University of Sharjah Colleges, 2007/2008.
- Organized the ISI research group workshop on Complex Systems and Applications, April 2008.
- Gave expertise on Biomedical Engineering Program, University Technology, June 2008, Malaysia.