

FAHED H. AWAD, PhD, CPT

Department of Network Engineering and Security
Faculty of Computer and Information Technology
Jordan University of Science and Technology
P.O. Box 3030, Irbid, 22110 Jordan
+962-2-7201000 ext. 22500 (Office)
+962-79-6535304 (Mobile)
<http://www.just.edu.jo/~fhawad>
fhawad@just.edu.jo, fhawad@ieee.org



1. Personal Information

a. Education

- 2002 Ph.D. University of Wisconsin – Milwaukee (UWM), USA.
Department of Electrical Engineering and Computer Science.
Dissertation Title: “*Coexistence Techniques for the ISM Band Wireless Services.*”
- 1994 M.Sc. University of Wisconsin – Milwaukee (UWM), USA.
Department of Electrical Engineering and Computer Science.
Thesis Title: “*Learning Finite-State Automata, a Practical Approach.*”
- 1990 B.Sc. Jordan University of Science & Technology (JUST), Irbid, Jordan.
Department of Electrical Engineering.

b. Experience

- 2016-now Director,
Center of Excellence for Innovative Projects,
Jordan University of Science and Technology, Irbid, Jordan.
- 2012-now Associate Professor,
Department of Network Engineering and Security,
Jordan University of Science and Technology, Irbid, Jordan.
- 2014-2015 Visiting Associate Professor,
Department of Computer Science,
Princess Sumaya University for Technology, Amman, Jordan
- 2009-2012 Assistant Professor and Founding Chairman,
Department of Network Engineering and Security,
Jordan University of Science and Technology, Irbid, Jordan.

- 2004-2008 Assistant Professor,
Department of Computer Engineering,
Jordan University of Science and Technology, Irbid, Jordan.
- 2001-2004 Senior Research Scientist,
Advanced Technology Laboratories,
Rockwell Automation, Milwaukee, Wisconsin, USA.
- 2000-2001 Senior Network Design Engineer,
Engineering and Operations,
AT&T Wireless Inc., Milwaukee, Wisconsin, USA.
- 1998-2000 Network Design Engineer,
Engineering and Operations,
Indus Inc., Milwaukee, Wisconsin, USA.
- 1996-1998 Network and Switching Design Engineer,
Engineering and Operations,
Sprint PCS, Milwaukee, Wisconsin, USA.
- 1998-2000 Network Administrator,
Department of Enrollment Services,
University of Wisconsin – Milwaukee, USA.
- 1993-1994 Research Assistant,
Department of Electrical Engineering and Computer Science,
University of Wisconsin – Milwaukee, USA.
- 1992-1996 Lecturer/Teaching Assistant,
Department of Electrical Engineering and Computer Science,
University of Wisconsin – Milwaukee, USA.
- 1991-1992 Maintenance Engineer and Manager,
Electronic Supplies Corner, Irbid, Jordan.
- 1990-1991 Teaching Assistant,
Department of Electrical Engineering,
Jordan University of Science and Technology, Irbid, Jordan.

2. Research and Scholarly Activities

a. Patents

- A.1 **Fahed Awad**, Sarah Homsy, Mhd Adel Al Qodmani, “A Method for Seamless Multi-Link Network Connectivity.” United States Patent and Trademark Office, Patent Number 9,876,724, Jan. 2018.

- A.2 Gollhardt, Neil; Jensen, David L.; **Awad, Fahed H.**; Shen, Jie; Brandt, David D.; Rollay, David T., "System and Method for Monitoring a Motor Control Center," *United States Patent and Trademark Office*, Patent Number 7,528,612, May 2009.
- A.3 Farchmin, David W.; Brandt, David D.; Pai, Ramdas M.; **Awad, Fahed H.**, "System and Method for Providing Location Based Information," *United States Patent and Trademark Office*, Patent Number 7,116,993, Oct. 2006.
- A.4 Brandt, David D.; Farchmin, David W.; Pai, Ramdas M.; **Awad, Fahed H.**, Nguyen, Thong, "Machine Associating Method and Apparatus." *World Intellectual Property Organization, International Bureau*, Patent Number WO/2004/029741, April 2004.

b. Patents Pending

- B.1 **Fahed Awad**, "System and Method for Distributed and Dynamic Location Identification of Mobile Devices." *United States Patent and Trademark Office*, Patent Application Number US14581242, Dec. 2014.
- B.2 Mohamed Al-Fandi, Mohammad Al-Rousan, Mohammad Jaradat, **Fahed Awad**, Inad Al-Jarrah, Omar Al-Jarrah, "System and method for providing real-time visual feedback to control multiple autonomous nano-robots." *United States Patent and Trademark Office*, Patent Application Number US 14/853,236, Sep. 2015.

c. Refereed Journal Articles

- C.1 **Fahed Awad**, Muhammad Naserllah, Ammar Omar, Alaa Abu-Hantash, Abrar Al-Taj, "Collaborative Indoor Access Point Localization Using Autonomous Mobile Robot Swarm." *Sensors*, vol. 18, no. 2, pp. 407, January 2018.
- C.2 Eyad Taqieddin, **Fahed Awad**, Hani Ahmad, "Location-Aware and Mobility-Based for Wireless Sensor Networks," *Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications (JoWUA)*, vol. 8, no. 4, pp. 37-59, December 2017.
- C.3 Mohammad Jaradat, Muath Bani-Salim, **Fahed Awad**, "A Highly-Maneuverable Demining Autonomous Robot: An Over-Actuated Design (DABOT)," *Journal of Intelligent & Robotic Systems*, accepted for publication, 2017.
- C.4 Omar Banimelhem, Eyad Taqieddin, Moad Mowafi, **Fahed Awad**, Feda' Al-Ma'aqbeh, "Fuzzy Logic-Based Cluster Heads Percentage Calculation for Improving the Performance of the LEACH Protocol," *International Journal of Fuzzy System Applications (IJFSA)*, vol. 4, no. 4, pp. 100-118, October 2015.
- C.5 Moad Y. Mowafi, **Fahed H. Awad**, Walid A. Aljoby, "A novel approach for extracting spatial correlation of visual information in heterogeneous wireless multimedia sensor networks," *Computer Networks*, vol. 71, no. 4, pp. 31-47, October 2014.
- C.6 **Fahed Awad**, Rufaida Shamroukh, "Human Detection by Robotic Urban Search and Rescue Using Image Processing and Neural Networks," *International Journal of Intelligence Science (IJIS)*, vol. 4, no.2, April 2014.

- C.7 Eyad Taqieddin, **Fahed Awad**, Sally Abdallah, “Transitive Location Verification Algorithm in Location-Based Routing for Wireless Sensor Networks,” *Journal of Ad Hoc & Sensor Wireless Networks (AHSWN)*, vol. 21, no. 3-4, pp. 237-257, February 2014.
- C.8 **Fahed Awad**, Mohamed Alsheakhali, “Traffic-Aware and Low-Overhead Routing Protocol for Mobile Ad Hoc Networks,” *International Journal of Communication Networks and Distributed Systems (IJCNDs)*, vol. 10, no. 3, pp. 303-315, April 2013.
- C.9 Moad Mowafi, **Fahed Awad**, Mohammed Al-Batati, “Opportunistic Network Coding for Real-Time Transmission over Wireless Networks,” *Journal of Network Protocols and Algorithms (NPA)*, vol. 5, no. 1, pp. 1-19, March 2013.
- C.10 Eyad Taqieddin, Moad Mowafi, **Fahed Awad**, Omar Banimelhem, Hani Maher, “An Energy-Balanced Cluster-Based Protocol for Wireless Sensor Networks,” *International Journal of IT and Web Engineering (IJITWE)*, vol. 8, pp. 50-63, January 2013.
- C.11 **Fahed Awad**, Eyad Taqieddin, Asmaa Seyam, “Energy-Efficient and Coverage-Aware Clustering in Wireless Sensor Networks,” *Wireless Engineering and Technology (WET) Journal*, vol.3, no.3, pp. 142-151, July 2012.
- C.12 Moad Mowafi, **Fahed Awad**, Eyad Taqieddin, Omar Banimelhem, “A Practical Study of Jointly Exploiting Multiple Image Compression Techniques for Wireless Multimedia Sensor Networks,” *Journal of Communications (JCM)*, vol. 7, no. 4, pp. 309-320, April 2012.
- C.13 **Fahed Awad**, Omar Banimelhem, Eyad Taqieddin, Raed Banihani, “Undergraduate Program in Network Engineering and Security – A Feasibility Study,” *International Journal of Modern Education and Computer Science (IJMECS)*, vol. 4, no. 2, pp. 45-51, March 2012.
- C.14 Ivan Howitt, **Fahed Awad**, "Optimizing IEEE 802.11b packet fragmentation in collocated Bluetooth interference," *IEEE Transactions on Communications*, vol.53, no.6, pp. 936- 938, June 2005.
- C.15 Ivan Howitt, **Fahed Awad**, “Capacity Analysis Based on Using Adaptive Antenna Arrays Jointly Optimized for Trunking and Spatial Efficiency,” *EURASIP Journal on Applied Signal Processing*, vol. 6, pp. 635-646, June 2002.

d. Journal Articles in review

- D.1 **Fahed Awad**, “Optimization of Relay Node Deployment for Multi-Source Multi-Path Routing in Wireless Multimedia Sensor Networks Using Gaussian Distribution.” Submitted for publication.
- D.2 **Fahed Awad**, Aisha Al-Sadi, Fida’a Al-Quran, “Distributed and Adaptive Location Identification System for Mobile Devices.” Submitted for publication.

e. Articles in Refereed Symposia, Conferences, and Workshops

- E.1 **Fahed Awad**, Ammar Omar, Muhammad Naserllah, Alaa Abu-Hantash, Abrar Al-Taj, “Access Point Localization Using Autonomous Mobile Robot,” In *Proceedings of the 2017 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT)*, Amman, Jordan, October 2017.
- E.2 Ibrahim Alafif, **Fahed Awad**, Nailah Al-Madi, “Energy-Aware Geographic Routing Protocol with Sleep Scheduling for Wireless Multimedia Sensor Networks,” In *Proceedings of the 14th International Conference on Smart Cities: Improving Quality of Life-Using ICT & IoT (HONET-ICT)*, Irbid, Jordan, October 2017.
- E.3 Abdulsalam Alsmady, **Fahed Awad**, “Optimal Wi-Fi Access Point Placement for RSSI-Based Indoor Localization Using Genetic Algorithm,” In *Proceedings of the 8th International Conference on Information and Communication Systems (ICICS17)*, Irbid, Jordan, April 2017.
- E.4 Aisha Al-Sadi, Hana’ Al-Theiabat, **Fahed Awad**, “Smartphone-Assisted Location Identification Algorithm for Search and Rescue Services,” In *Proceedings of the 8th International Conference on Information and Communication Systems (ICICS17)*, Irbid, Jordan, April 2017.
- E.5 **Fahed Awad**, Mohammad Al-Refai, Ahmad Al-Qerem, “Rouge Access Point Localization Using Particle Swarm Optimization,” In *Proceedings of the 8th International Conference on Information and Communication Systems (ICICS17)*, Irbid, Jordan, April 2017.
- E.6 **Fahed Awad**, Deema Abu Hussien, Wala' Al-Qura'An, Bayan Taani, “WiMap: an Efficient Wi-Fi Access Point Localization Mechanism,” In *Proceedings of the International Computer Sciences and Informatics Conference (ICSIC 2016)*, Amman, Jordan, January 2016.
- E.7 Ghaith Bilbeisi, Nailah Al-Madi, **Fahed Awad**, “PSO-AG: A Multi-Robot Path Planning and Obstacle Avoidance Algorithm,” In *Proceedings of the 2015 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT)*, The Dead Sea, Jordan, November 2015.
- E.8 **Fahed H. Awad**, “Wireless Location Estimation Using Virtual Forces.”, In *Proceedings of the 14th IEEE International Conference on Ubiquitous Computing and Communications (IUCC 2015)*, Liverpool, United Kingdom, October 2015.
(40 papers accepted out 138 papers submitted – 29% acceptance ratio)
- E.9 **Fahed H. Awad**, Moad Y. Mowafi, Walid A. Aljoby, “Correlation Model for Randomly Deployed Heterogeneous Cameras in Wireless Multimedia Sensor Networks,” In *Proceedings of the 16th International Conference on Computer as a Tool (The IEEE Region 8 EUROCON’2015)*, Salamanca, Spain, September 2015.
- E.10 **Fahed Awad**, Eyad Taqieddin, Moad Mowafi, Omar Banimelhem, Amani AbuQdais, “A Simulation Testbed to Jointly Exploit Multiple Image Compression Techniques for Wireless Multimedia Sensor Networks,” In *Proceedings of the 11th International Symposium of Wireless Communication Systems (ISWCS’2014)*, Barcelona, Spain, August 2014.

- E.11 Omar Banimelhem, Moad Mowafi, Eyad Taqieddin, **Fahed Awad**, Manar Al Rawabdeh, "An Efficient Clustering Approach using Genetic Algorithm and Node Mobility in Wireless Sensor Networks," In *Proceedings of the 11th International Symposium of Wireless Communication Systems (ISWCS'2014)*, Barcelona, Spain, August 2014.
- E.12 Moad Mowafi, **Fahed Awad**, Walid Aljoby, "Spatial Correlation Model for Heterogeneous Cameras in Wireless Multimedia Sensor Networks," In *Proceedings of the 14th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2013)*, Madrid, Spain, June 4-7, 2013.
(38 papers accepted out 148 papers submitted - 26% acceptance ratio)
- E.13 Asmaa Seyam, **Fahed Awad**, Eyad Taqieddin, "Energy-Efficient Clustering Algorithm for Wireless Sensor Networks Using the Virtual Field Force," In *Proceedings of the 5th International Conference on New Technologies Mobility and Security (NTMS'12)*, Istanbul, Turkey, May 2012.
(65 papers accepted out 219 papers submitted - 29% acceptance ratio)
- E.14 **Fahed Awad**, Omar Banimelhem, Nadia Al-Rousan, "The Potential of Using Network Coding with Geographical Forwarding Routing for Wireless Multimedia Sensor Networks." In *Proceedings of the 11th IEEE International Conference on Computer and Information Technology (CIT '11)*, Paphos, Cyprus, pp. 9-14, August 2011.
(105 papers accepted out 362 papers submitted - 29% acceptance ratio)
- E.15 Mohammad Jaradat, Muath Bani-Salim, **Fahed Awad**, "Autonomous Navigation Robot for Landmine Detection Applications." In *Proceedings of the 8th International Symposium on Mechatronics and its Applications (ISMA12)*, Sharjah, UAE, April 2012.
(44 papers accepted out 78 papers submitted - 56% acceptance ratio)
- E.16 **Fahed Awad**, Firas Daghmash, "Enhanced Guaranteed Time Slot Algorithm for the IEEE 802.15.4 Standard." In *Proceedings of the 3rd International Conference on Information and Communication Systems (ICICS12)*, Irbid, Jordan, April 2012.
(26 papers accepted out 70 papers submitted - 37% acceptance ratio)
- E.17 Feda' Al-Ma'aqbeh, Omar Banimelhem, Eyad Taqieddin, **Fahed Awad**, Moad Mowafi, "Fuzzy Logic Based Energy Efficient Adaptive Clustering Protocol." In *Proceedings of the 3rd International Conference on Information and Communication Systems (ICICS12)*, Irbid, Jordan, April 2012.
(26 papers accepted out 70 papers submitted - 37% acceptance ratio)
- E.18 Moad Mowafi, **Fahed Awad**, Eyad Taqieddin, Omar Banimelhem, "Experimental Evaluation of Image Compression and Transmission for TinyOS-based Imote2 Platform." In *Proceedings of the International Conference on Innovations in Information Technology 2011 (IIT)*, pp.173-178, 25-27 April 2011.
- E.19 Rufaida Shamroukh, **Fahed Awad**, "Detection of Surviving Humans in Destructed Environments Using a Simulated Autonomous Robot." In *Proceedings of the 6th International Symposium on Mechatronics and its Applications 2009 (ISMA'09)*, pp.1-6, 23-26 March 2009.

- E.20 Mohamed Alsheakhali, **Fahed Awad**, "TALORP Routing Protocol for MANETs." In *Proceedings of the 1st IFIP Wireless Days Conference 2008 (WD'08)*, pp.1-5, 24-27 Nov. 2008.
- E.21 Ivan Howitt, **Fahed Awad**, "Capacity Enhancement Based on Using Adaptive Antenna Arrays Optimized for Trunking Efficiency." In *Proceedings of the 52nd IEEE VTS-Fall Vehicular Technology Conference, 2000 (VTC 2000)*, pp.142-149 vol.1, Sep. 2000.

f. Non-Refereed Research Publications

- F.1 Aisheh Al-Sadi, Hana' Al-Theiabat, **Fahed Awad**, "MobileRescue: A Collaborative Smartphone Application for Emergency Services." In *Proceedings of Extended Abstracts of the 5th Annual Undergraduate Research Conference on Applied Computing (URC 2013)*, Dubai, UAE, May 2013.
- F.2 Wedyan Al-Switi, Nadia Bani-Mostafa, **Fahed Awad**, Omar Banimelhem, "An Intelligent Computer-Aided Pronunciation Teaching System for Arabic Alphabets." In *Proceedings of Extended Abstracts of the 4th Annual Undergraduate Research Conference on Applied Computing (URC 2012)*, Dubai, UAE, April 2012.
- F.3 Mohammad Al-Ali, Ghayth Qaralleh, **Fahed Awad**, "Real Time Drawing in 3D Space." In *Proceedings of Extended Abstracts of the 4th Annual Undergraduate Research Conference on Applied Computing (URC 2012)*, Dubai, UAE, April 2012.
- F.4 **Fahed Awad**, Neil Gollhardt, Jie Shen, David Jensen, "MCC Voltage and Temperature Monitoring System." Technical Report. Advanced Technology Laboratories, Rockwell Automation, 2004.
- F.5 David Brandt, **Fahed Awad**, Fred Discenzo, "Wireless LAN Site Survey and Site Audit." Technical Report. Advanced Technology Laboratories, Rockwell Automation, 2003.
- F.6 David Brandt, and Thong Nguyen, **Fahed Awad**, "Factory Automation Security Architecture Requirements." Technical Report. Advanced Technology Laboratories, Rockwell Automation, 2003.
- F.7 **Fahed Awad**, "Performance Evaluation and Optimization of the Ekahau Wireless Location-Based Technology." Technical Report. Advanced Technology Laboratories, Rockwell Automation, 2002.
- F.8 **Fahed Awad**, David Brandt, and Thong Nguyen, "IEEE 802.11b Wireless LAN Security: Weaknesses and Solutions," White Paper. Advanced Technology Laboratories, Rockwell Automation, 2002.
- F.9 David Brandt, and Thong Nguyen, **Fahed Awad**, "Reconfigurable and Scalable Distributed Shipboard Automation System." Technical Report. Advanced Technology Laboratories, Rockwell Automation, 2002.
- F.10 **Fahed Awad**, David Brandt, and Thong Nguyen, "Wireless Communication Link." Technical Report. Advanced Technology Laboratories, Rockwell Automation, 2001.

g. Presentations and Invited Talks

- G.1 “Visual Sensor Network.” The King Abdullah II Design and Development Bureau (KADDB), Al-Mafraq, Jordan, 2010.
- G.2 “Multi-Robot Navigation System.” The King Abdullah II Design and Development Bureau (KADDB), Al-Mafraq, Jordan, 2010.
- G.3 “Low-Cost, Open-Standard, and Battery-Powered Wireless Networks.” Technology Update. Advanced Technology Laboratories, Rockwell Automation, 2004.
- G.4 “Considerations and Recommendations for Industrial Wireless Solutions.” The Industrial Wireless Applications Summit, San Diego, California, USA, 2003.
- G.5 “Zigbee Wireless Personal Area Networks.” Technology Update. Advanced Technology Laboratories, Rockwell Automation, 2002.

h. Contracts and Grants

- H.1 Principal investigator, “The Impact of localization Error on Location-based Routing in Wireless Sensor Networks,” funded by the Deanship of Scientific Research, Jordan University of Science and Technology, 2016 (JOD 4,900).
- H.2 Local coordinator, “SAXEED.JET,” funded by the German Academic Exchange Service or Deutscher Akademischer Austausch Dienst (DAAD), 2017 (~EUR 400,000)
- H.3 Co-investigator, “Promotion of Innovation Culture in the Higher Education in Jordan (INVENT),” funded by the Education, Audiovisual and Culture Executive Agency (EACEA), European Union, the ERASMUS+ Program, 2015 (~EUR 880,000).
- H.4 Co-investigator, “Improving Higher Education Quality in Jordan using Mobile Technologies for Better Integration of Disadvantaged Groups to Socio-economic Diversity (mEQUITY),” funded by the Education, Audiovisual and Culture Executive Agency (EACEA), European Union, the ERASMUS+ Program, 2015 (~EUR 786,000).
- H.5 Co-investigator, “3-D Automated Miniaturized Manipulator,” funded by the Royal Hashemite Court, 2013 (~JOD 141,000)
- H.6 Principal investigator, “Distributed and seamless location identification system for mobile devices,” funded by the Deanship of Scientific Research, Jordan University of Science and Technology, 2013 (JOD 12,500).
- H.7 Co-investigator, “Improving the Functionality of LEACH Protocol Using Computational Intelligence Methods,” funded by the Deanship of Scientific Research, Jordan University of Science and Technology, 2012 (JOD 6,000).
- H.8 Principal investigator, “Experimental Performance Evaluation for Mobile Wireless Multimedia Sensor Networks,” funded by the Deanship of Scientific Research, Jordan University of Science and Technology, 2010 (JOD 12,400).

H.9 Principal investigator, “QoS Routing for Industrial Wireless Sensor Networks,” funded by the Deanship of Scientific Research, Jordan University of Science and Technology, 2005 (JOD 1,500).

H.10 Travel grants (7 times), 2008, 2009, 2010, 2011, 2012, 2014, 2015.

3. Awards and Recognitions

- Mentor, National Technology Parade 2017, First Place Award, Intelligent Systems, May 2017.
- Mentor, Graduation Project Contest, Second Place Award, Electrical Engineering Branch, Jordan Engineering Association (JEA), February, 2015.
- Mentor, Queen Rania National Entrepreneurship Competition (QRNEC), Second Place Award for Universities and Academia, Queen Rania Center for Entrepreneurship (QRCE), Amman, Jordan, March 2014.
- Mentor, Best Student Poster Award, “The 9th International Symposium on Mechatronics and its Applications (ISMA13), Amman, Jordan, April 2013.
- Mentor, Microsoft-Jordan Imagine Cup First Place Award, Amman, Jordan, May 2012.
- Best Research Paper Award, “The 3rd International Conference on Information and Communication Systems (ICICS’12),” Irbid, Jordan, April 2012.
- Mentor, Best Oral Presentation Award, “The 4th Annual Undergraduate Research Conference on Applied Computing (URC’12),” Dubai, UAE, April 2012.
- Mentor, National Technology Parade 2010, First Place Award, Intelligent Systems, May 2010.
- Mentor, National Technology Parade 2010, Audience Award, May 2010.
- Made-in-Jordan (MIJ) competition, professional level, second place award, Queen Rania Center of Entrepreneurship (QRCE), Amman, Jordan, July 2009.
- Dean’s Recognition for conducting a feasibility study on initiating a new academic program in Network Engineering and Security, Jan. 2009.
- Mentor, National Technology Parade 2007, First Place Award, Wireless and Mobile Systems, May 2007.
- Capture-the-Moment Award for coordinating a very successful participation in the international Automation Fair Exhibition, Rockwell Automation, Milwaukee, Wisconsin, USA, Dec. 2003.
- Capture-the-Moment Award for initiating the wireless business services, Rockwell Automation, Milwaukee, Wisconsin, USA, Jan. 2002.
- Recognition award for being an integral member of the Network Engineering and Operations Team that built the Sprint PCS Mobile Network in the Milwaukee–Wisconsin Metropolitan Trading Area (MTA), Dec. 1996.

4. Teaching and Advising

a. Courses Taught

<i>Course Number</i>	<i>Course Title</i>	<i>Semester</i>	<i>Student Evaluation</i>
NES 201	Communication Skills	Fall'12	90%
		Spring'13	88%
NES 311	Data Communication	Fall'15	80%
NES 312	Fundamentals of Computer Networks	Fall'16	81%
		Spring'16	84%
		Fall'12	91%
		Fall'13	83%
		Spring'14	89%
NES 413	Computer Networks Laboratory	Fall'13	n/a
NES 440	Wireless Networks	Spring'17	79%
		Spring'13	85%
		Fall'13	84%
		Spring'16	77%
NES 540	Wireless Networks Protocols	Spring'14	n/a
NES 543	Wireless Networks Laboratory	Fall'16	n/a
		Spring'14	n/a
		Fall'15	n/a
CPE 595	Special Topics in Computer Engineering: Wireless and Mobile Networks	Spring'12	86%
		Spring'10	90%
		Spring'09	93%
		Fall'07	91%
CPE 442	Computer Networks	Fall'11	88%
		Spring'11	91%
		Spring'07	89%
		Fall'06	86%
		Spring'06	84%
		Fall'05	87%
		Spring'05	89%
CPE 441	Data Communication	Fall'10	92%
		Spring'09	90%
		Fall'08	91%
		Spring'08	89%
		Spring'07	85%
		Fall'04	91%
CPE 251	Digital Logic Design	Fall'09	95%
		Spring'08	88%
		Fall'07	95%
		Fall'06	94%
		Spring'05	92%

		Fall'04	91%
CPE 253	Digital Logic Design Lab	Spring'12	85%
		Spring'11	87%
		Fall'06	n/a
		Spring'06	n/a
		Fall'05	n/a
		Fall'04	n/a
CPE 255	Digital Logic Design Lab (Non-CPE)	Fall'08	80%
		Spring'08	91%
		Fall'05	n/a
		Fall'04	n/a
CPE 252	Computer Organization and Design	Fall'08	84%
		Spring'06	78%
CPE 451	Microprocessor System Design	Fall'05	82%
ME 787	Introduction to Computer Networks	Spring'10	n/a
CS102 *	Introduction to Computer Science	Fall'14	93%
		Spring'15	79%
CS435 *	Data Communication and Networking	Fall'14	82%
		Spring'15	86%
CS449 *	Computer and Society	Fall'14	94%
		Spring'15	89%
CS711 *	Data Communication and Networking	Fall'14	n/a
		Spring'15	n/a

* At PSUT

- The instructor's evaluation score by the students is conducted by the university's Academic Development Center at the end of each semester (except for summer semesters).
- The department average score is in the range 80-85%.

b. Course and Curriculum Development

Department of Network Engineering and Security

- In Spring 2014, I designed and taught the new NES540 course titled Wireless Networks Protocols as an elective course in the department of Network Engineering and Security. This was the first course to cover all aspects of mobile ad hoc and wireless sensor networks protocols, including routing, topology management, and localization protocols; as well as the state-of-the-art wireless and mobile networking protocols such as LTE, WiMax, IEEE802.11ac, and Li-Fi. The course was designed to allow the students to read and present recent articles and research paper and perform a research-oriented term project/paper.
- In Spring 2014, I led a group of faculty members to design the contents of the new NES543 (Wireless Networks Laboratory). The course covers the practical aspects of the NES440 (Wireless Networks) course and the tools needed to design, configure, monitor, debug, and maintain wireless networks.
- In 2012, I led a group of faculty members to design the contents of the new NES412 (Computer Networks Laboratory) that was offered for the first time in Fall 2012. The course covers the practical aspects of the NES311 (Data Communication) and NES312 (Computer Networks) courses and the tools needed to monitor, configure, and maintain computer networks.

- In 2008, I led a group of faculty members to design and develop the curriculum and study plan for the new program of network engineering and security. The new program has been active for three years.
- In 2008, I led a group of faculty members to prepare ABET-compliant syllabi for all intra-department courses; as part of the effort to initiate a new program of network engineering and security with a target to be ABET-accredited by 2014. In addition, I was directly responsible for preparing syllabi for five courses: NES311 (Data Communication), NES312 (Computer Networks), NES412 (Computer Networks Laboratory), NES440 (Wireless Networks), and NES543 (Wireless Networks Laboratory)

Department of Computer Engineering

- In Fall 2004, I significantly revised the curriculum and contents of the CPE441 (Data Communication) course and changed the textbook. I renovated the course from being a pure electrical engineering signal analysis course to a course that covers all aspects of the physical layer of the computer network stack. This course well-prepared the students to the CPE442 (Computer Networks) course, for which it is a prerequisite.
- In Spring 2005, I significantly revised the curriculum and contents of the CPE442 (Computer Networks) course and changed the textbook. I renovated the course, which used to follow the traditional bottom-up approach that covers the OSI networking model, to the newer top-down approach that focuses on the Internet stack and the Internet standards.
- In Spring 2005, I significantly revised the curriculum and contents of the CPE251 (Digital Logic Design) course and changed the textbook. The revised version of the course had a better flow of topics that helped the students grasp the concept better in such a core course.
- In Fall 2005, I significantly revised the experiments of the CPE253 (Digital Logic Design Laboratory) to comply with the newly revised CPE251 (Digital Logic Design) course, for which is a prerequisite. The new experiments covered the theoretical material in a more comprehensive and fun way.
- In Spring 2005, I served as a committee member to revise the assignment and evaluation policy of the senior project. This included the grade distribution, the supervisor-student assignment, forming the project committee, and the discussion and evaluation policies.
- In Fall 2007, I designed and taught a new course in wireless and mobile networks as a special topic in computer engineering. This was the first course to cover all aspects of wireless and mobile networking including the physics of RF signal propagation, the physical, data link, and network layer standards for wireless personal, local and wide area networks. The course was well-accepted by the senior computer engineering students as it closed a big gap in their knowledge of a fast-growing technology in the job market. A number of students reported that this course helped them secure highly competitive job positions. In Spring 2009, based on the students' feedback, I revised the curriculum of the course, designed and added research-oriented term projects, and taught it again. In Spring 2010, I revised the course again, added some laboratory experiments, and taught it again.
- In Spring 2007, I served as committee member to revise the curriculum and contents of the CPE252 (Computer Design and Organization) course, select a new textbook, and prepare a guide for the instructors on how to achieve the teaching objective and course outcomes.
- In Spring 2007, I served as committee member to suggest a list of networks-related core and advanced courses as part of the a new undergraduate curriculum.

- In Spring 2008, I served as a committee member to propose recommendations to improve the mechanism of student evaluation of the department courses.
- In Fall 2008, I served as a committee member to prepare course description for all network-related courses in the newly revised undergraduate curriculum.
- In Fall 2008, I served as a committee member to revise and improve the undergraduate computer engineering curriculum and the associated study plan. The revised curriculum was compliant with the IEEE/ACM standard for engineering programs. The new curriculum has been in use for three years.
- In Spring 2010, I served as a committee chair to prepare ABET-compliant syllabi and portfolios for all network-related courses in the undergraduate curriculum, including course descriptions; in preparation for the ABET-Accreditation targeted in 2014.
- In Spring 2010, I served as committee member to revise and improve the curriculum of the master program.

c. Manuals, Notes, Software, Webpages, and Other Contributions to Teaching

- Manuals. Created a lab manual for CPE253 (Digital Logic Design Lab).
- Lecture notes. Created lecture notes and/or slides for the following courses: CPE251 (Digital Logic Design), CPE252 (Computer Design and Organization), CPE441 (Data Communication), CPE442 (Computer Networks), CPE595 (Wireless and Mobile Networks), and NES540 (Wireless Networks Protocols).
- Software. Developed a grading tool that helps the faculty members to easily manage students' grades and automatically generate statistics and reports. This tool, which has been adopted by most of my colleagues, has been of great benefit to coordinated course with large number of sections.
- Course web pages. Developed web pages for all courses taught to post course information, lecture notes and slides, assignments, and announcements.

d. Advising (non-research)

- Academic advisor for a number of Network Engineering and Security undergraduate students. 2011-now.
- Academic advisor for the 2003 Computer Engineering class of about 100 undergraduate students. 2004-2008.
- Academic advising coordinator for the Department of Network Engineering and Security. 2009-present.
- Supervised/co-supervised over 25 senior projects for about 75 Computer Engineering students and served as a member of a project examination committee for over 50 senior projects.

A list of selected senior projects that I supervised/co-supervised

<i>Title of the Project</i>	<i>Semesters</i>
Vehicle-to-Vehicle Communication	S'17 & F'17

Collaborative Mobile Robot Swarm *	F'16 & S'17
Collaborative Bus Tracker	F'15 & S'16
Keen Surveillance System	F'15 & S'16
Smartphone-based Carpooling System ¹	S'15
Location-based Advertising System ¹	S'15
Vehicle-to-Vehicle Communication	S'14 & F'14
Smart Wi-Fi Mapping	F'13 & S'14
Smart Navigation System *	F'13 & S'14
Secure Transitive Location Verification for Wireless Sensor Networks	F'13 & S'14
Mobile-Assisted Localization for Rescue Services	F'12 & S'13
Bio-Inspired Simulated Nano Robot	F'12 & S'13
Distributed Multi-Robot Task Allocation and Execution	S'12 & F'12
Arabic Learning Personal Assistant Device	S'11 & F'11
Drawing in 3D Space	S'11 & F'11
Smart Energy Saving System	F'10 & S'11
Multi-Robot Navigation system	F'10 & S'11
Location Identification Using Wireless Sensor Networks	S'10 & F'10
Baby Attitude Monitoring using Wearable Sensor Networks	S'10 & F'10
Mobile Object Tracking	S'10 & F'10
Smart Wireless Face Recognition System *	F'09 & S'10
Search and Rescue Robot *	F'09 & S'10
Smart Audio Detection System for Rescue	F'08 & S'09
Smart Wireless Surveillance System *	S'08 & F'08
Wireless Video Surveillance System	F'07 & S'08
Three-Dimensional Object Scanning System *	S'07 & F'07
Smart Irrigation System Using Wireless Sensor Networks	S'07 & F'07
Environment Monitoring Using Wireless Sensor Networks and Geographical Information Systems	F'06 & S'07

* National Award Winner

¹Princess Sumaya University for Technology

e. Advising (research)

Master Thesis Supervised/Co-Supervised

<i>Student</i>	<i>Grad. Date</i>	<i>Title of the Thesis</i>
Alaa Altarazi ¹	Jan'18	Geometric-Based Wireless Sensor Network Localization Algorithm
Ibrahim Alafeef ¹	Jan'18	Energy-Aware Geographic Routing Protocol with Sleep Scheduling for Wireless Multimedia Sensor Networks
Mohammad Alrefai ²	Dec'16	Rogue Access Point Localization Using Particle Swarm Optimization
Hani Alshater	Jan'14	Node Mobility Exploitation Algorithms for Optimizing Performance of WSN

Ammar Malkawi	June'13	Multi-Source Geographical Routing Protocol with Disjoint-Paths for Wireless Multimedia Sensor Networks
Walid Aljoby	Jan'12	Energy- Efficient Correlation-Aware Video Streaming for Wireless Multimedia Sensor Networks
Muath Bani-Salim	July'12	Design and Build of an Autonomous Navigation Robot
Mohammad Al-Btati	Dec'11	Opportunistic Network Coding for Real-Time Transmission over Wireless Networks
Asmaa Seyam	July'11	A Node Location Optimization Algorithm for Energy-Efficient Clustering in Wireless Sensor Networks
Sally Abdallah	July'11	Transitive Location Verification Algorithm in Location-Based Routing for Wireless Sensor Networks
Mohamed Al-Sheakhali	Aug'07	Traffic-Aware and Low-Overhead Routing Protocol for Mobile Ad Hoc Network
Firas Daghmash	April'07	IEEE 802.15.4-Based Energy-Delay Enhancements in Wireless Sensor and Actuator Networks
Rufaida Shamroukh	April'06	Detection of Surviving Human Buried Under Rubble Using Urban Search and Rescue Robot
Naheel Qudan	April'06	Source-Destination Ad Hoc on-Demand Distance Vector Routing Protocol for Mobile Ad Hoc Networks
Hussein Shatnawi	Jan'06	On-demand QoS Multi-Path Routing Protocol for Mobile Ad Hoc Networks

¹ Princess Sumaya University for Technology

² Zarqa University

Doctoral Thesis Supervised/Co-Supervised

There are no Ph.D. programs offered by the Faculty of Computer and Information Technology at JUST.

f. Thesis Committees

Master thesis I served in as a committee member/examiner

<i>Student</i>	<i>Grad. Date</i>	<i>Title of the Thesis</i>
Rozana Marar ¹	Aug'16	Technology Enhanced Learning using Augmented Reality
Mohammad Obaidullah	Dec'08	A New Hybrid Approach for Detection and Estimation in Wireless Sensor Networks
Fadi Ghanem	July'08	Extending the Lifetime of Wireless Sensor Networks using Autonomous Mobile Robots
Rose Alqasim	May'07	An Adaptive Generic Algorithm for Solving VLSI Cell Placement Problem
Manar Arafat	Mar'06	Regulating Energy Consumption in Distributed Wireless Ad Hoc Networks
Saleem Masadeh	Feb'06	Development and Investigation of a Technique Combining Message Authentication and Encryption

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5. Service

a. Professional

- Professional Training Courses.
 - *Business and Administrative Communication Skills*, Tjdeed Technologies, Nov. 2014.
 - *Business and Administrative Communication Skills*, Consultative Center for Science and Technology, Jordan University of Science and Technology, Feb. 2014.
 - *Business and Administrative Communication Skills*, Consultative Center for Science and Technology, Jordan University of Science and Technology, Sep. 2013.
- Steering Committee Memembr.
 - *The 9th International Conference on Information and Communication Systems (ICICS18)*, Jordan University of Science and Technology, April 2018.
- Track Chair.
 - *The 8th International Conference on Information and Communication Systems (ICICS17)*, Jordan University of Science and Technology, April 2017.
- Program Committee Member.
 - *The Fifth International Conference of Information and Communications Systems (ICICS'14)*, Jordan University of Science and Technology, April 2014.
 - *The Third International Conference of Information and Communications Systems (ICICS'12)*, Jordan University of Science and Technology, April 2012.
 - *The 73rd IEEE Vehicular Technology Conference (VTC2011-Spring)*, Budapest, Hungary, May 2011.
 - *Wireless Communication Networks (WCN) track of Mosharaka International Conference on Wireless Communications and Mobile Computing (MIC-WCMC2011)*, Istanbul, Turkey, June 2011.
 - *The Second International Conference of Information and Communications Systems (ICICS'11)*, Jordan University of Science and Technology, May 2011.
 - *The Third IFIP Wireless Days*, Venice, Italy, Oct. 2010.
 - *The First International Nuclear & Renewable Energy Conference (INREC'10)*, Amman, Jordan, Mar. 2010.
 - *The First International Conference of Information and Communications Systems (ICICS'09)*, Jordan University of Science and Technology, Dec. 2009.
 - *The Second IFIP Wireless Days*, Paris, France, Dec. 2009.
 - *The First International Conference on Digital Communications and Computer Applications (DCCA'07)*, Jordan University of Science and Technology, Mar. 2007.
- Session Chair.
 - *The 11th International Symposium of Wireless Communication Systems (ISWCS'2014)*, Barcelona, Spain, August 2014.

- *The 2nd International Conference of Information and Communications Systems (ICICS'11)*, Jordan University of Science and Technology, May 2011.
- *The 6th International Symposium on Mechatronics and its Applications 2009 (ISMA'09)*, American University at Sharjah, Mar. 2009.
- Journal Reviewer:
 - ETRI Journal
 - Journal of Communication (JCM)
 - Journal of Communications and Networks
 - International Journal of Digital Content Technology and its Applications.
 - International Journal of Modeling and Simulation.
 - Journal of Intelligent and Fuzzy Systems.
 - Journal of Emerging Technologies in Web Intelligence.
 - Mu'tah Journal: Natural Sciences Series by Mu'tah University, Jordan.
- Voluntary Information Security Workshop.
 - Coordinated a voluntary workshop on information security for the Engineering Unit of the Royal Jordanian Air Forces, Consultative Center, Jordan University of Science and Technology, Sep. 2011.
- Project Evaluation Committee Chair.
 - Robotic and Intelligent Systems. *The 4th National Technology Parade*, Philadelphia University, Jordan, May 2011.
 - Wireless and Mobile Systems. *The 3rd National Technology Parade*, Jordan University of Science and Technology, Jordan, May 2010.

b. University

- Director of the Center of Excellence for Innovative Projects. 2016-now.
- Founding Chairman of the Department of Network Engineering and Security. 2009-2012.
- Founding director of the *Multimedia Networking Research Laboratory*. 2010-2012.
- Member of Computer and Information Technology College Council. 2009-2012.
- Founding supervisor of the *Technology Entrepreneurship Student Club*. 2009-2011.
- Co-founder and initiator of the *Undergraduate Program of Network Engineering and Security*, 2008.
- Team leader to conduct a feasibility study on initiating a new undergraduate program in Network Engineering and Security. 2007-2008.
- Member of Computer and Information Technology College Council. 2005-2006.
- Team leader of the *Paperless Memorandum System* project. 2006-2007.
- Advisor at the Arab and International Students Office. 2005-2006.

i. Department Committees

Department of Computer Science (Princess Sumaya University for Technology)

- Member. *Graduation Projects Committee*. 2014-2015.
- Member. *Graduate Program Curriculum Committee*. 2013-2014.

Department of Network Engineering and Security

- Member. *Curriculum and Quality Assurance Committee*. 2015-now.
- Member. *Course Schedule and Exams Committee*. 2015-2016.
- Member. *Graduation Projects Committee*. 2013-2014.
- Member. *Curriculum and Quality Assurance Committee*. 2013-2014.
- Member. *Curriculum and Quality Assurance Committee*. 2012-2013.
- Chair. *Scientific Research Committee*. 2011-2012.
- Chair. *Course Schedule and Exams Committee*. 2011-2013.
- Member. *Curriculum and Quality Assurance Committee*. 2010-2011.
- Chair. *Scientific Research Committee*. 2010-2011.
- Chair. *Scientific Research Committee*. 2009-2010.

Department of Computer Engineering

- Member. *Graduate Studies and Scientific Research Committee*. 2009-2012.
- Member. *Course Schedule and Exams Committee*. 2009-2012.
- Chair. *ABET Accreditation Preparation Committee*. 2010.
- Member. *Curriculum Committee*. 2007-2009.
- Member. *Course Description Committee*. 2008.
- Member. *Student Evaluation Enhancement Committee*. 2008.
- Member. *Curriculum Revision Committee*. 2007.
- Member. *Course Schedule Committee*. 2006-2007.
- Member. *Senior Project Evaluation Policy Committee*. 2005.
- Member. *Curriculum and Course Equivalency Committee*. 2004-2005.

ii. College Committees

- Member. *Student Disciplinary Committee*. 2015-2016.

- Chair. *Student Disciplinary Committee*. 2012-2013.
- Chair. *Innovation and Entrepreneurship Course Initiation Committee*. 2012.
- Member. *Curriculum and Course Equivalency Committee*. 2011-2012.
- Chair. *Initiating a Program in Network Engineering Committee*. 2008-2009.
- Chair. *Student Efficiency Improvement Committee*. 2008-2009.
- Member. *National Qualification Exam Committee*. 2007-2008.
- Member. *Library Committee*. 2004-2005.

iii. University Committees

- Member of the Appeal Committee for Staff Disciplinary Board. 2016-now.
- Member of Building Management System committee. 2017.
- Member of Strategic Planning Committee on Connecting with the Industry. 2016.
- Member of Strategic Planning Committee on Scientific Research. 2016.
- Member of Campus Security System committee. 2016.
- Member. *Academic Development Committee*. 2012-2014.
- Chair. *Evaluation of the JUST Video Surveillance System Technical Committee*. 2011-2012.
- Member. *Technical Committee for Department of Network Engineering and Security Lab. Supplies Tenders*. 2010-2012.
- Chair. *Office Supplies Tender Committee*. 2011.
- Member. *Technical Committee for Department of Computer Engineering Lab. Supplies Tender*. 2005.
- Member. *ZAIN Laboratory and Incubator Committee*. 2004.

6. CERTIFICATION and TRAINING

- **The World Intellectual Property Organization (WIPO)**
 - *The WIPO National Workshop on the Patent Cooperation Treaty (PCT): The System for Worldwide Filing of Patent Applications*, March 2017.
- **The Consultative Center for Science and Technology/LEAD Academy:**
 - *Certified Professional Trainer (CPT)*, Jordan University of Science and Technology, May 2013.
 - *Train-The-Trainer (TTT)*, Jordan University of Science and Technology, April 2013.

- **Intel Corporation:**
 - *A Collaborative Workshop to Innovate, Accelerate, and Integrate an Entrepreneurship Program*, Sep. 2011.
- **The Consultative Center for Science and Technology:**
 - Workshop of *Modern University Instructional Methods*, Jordan University of Science and Technology, May. 2016.
 - Workshop on *Statistical Analysis Using SPSS*, Jordan University of Science and Technology, Aug. 2014.
 - Workshop of *Modern University Instructional Methods*, Jordan University of Science and Technology, Sep. 2011.
 - Workshop of *Measuring and Evaluating Student Performance*, Jordan University of Science and Technology, Feb. 2005.
- **Technology Entrepreneurship Workshops:**
 - *Introduction to Technology Entrepreneurship*, Jordan University of Science and Technology, Dec. 2009.
 - *Technology Business Plans*, Jordan University of Science and Technology, Dec. 2009.
- **E-Learning Arabia:**
 - Workshop of *Moodle Authoring (Learning Management System)*, Jordan University of Science and Technology, Sep. 2007.
- **Zain Cellular Service Provide:**
 - Workshop of *GSM in Jordan, Principles and Applications*, Jordan University of Science and Technology, Jan. 2007.
- **Technology Perspectives:**
 - *Lean Project Management*, Rockwell Automation, Milwaukee, WI, USA, Aug. 2003.
 - *Lean Product Development*, Rockwell Automation, Milwaukee, WI, USA, Aug. 2003.
- **Alcatel, Technical Training Department:**
 - *G320: Network Sub-System Translation and Routing*, Raleigh, NC, USA, Aug. 1998.
 - *G210: Network Sub-System Networking*, Raleigh, NC, USA, July 1998.
- **Hughes Network Systems, Educational Services:**
 - *AIReach™ TDMA Introduction Course*, Washington DC, VA, USA, May 1998.
- **Lucent Technologies, Bell Labs Innovation, Learning and Performance Center:**
 - *CL1006: AUTOPLEX® System1000 System*, Orlando, FL, USA, May 2000.
 - *CL3632: AUTOPLEX® System1000 Growth*, Orlando, FL, USA, May 2000.
 - *CL3631: AUTOPLEX® System1000 Networking*, Orlando, FL, USA, May 2000.

- *CL3630: AUTOPLEX® System1000 Routing Translations*, Orlando, FL, USA, May 2000.
- *The IS-95 CDMA System for Cellular and Personal Communications*, NJ, USA, Oct. 1996.
- *CL3810: PCS CDMA Translation*, Columbus, OH, USA, Sep. 1996.
- *CL8005: Maintenance of the 5ESS-2000 Switch DCS AUTOPLEX®, Columbus, OH, USA, Aug. 1996.*
- **AT&T**, Customer Education & Training Center:
 - *CL1001X: AUTOPLEX® System1000 System Capacity Monitoring and Engineering Guidelines*, Columbus, OH, USA, August 1996.
 - *CL1001X: AUTOPLEX® System1000 Operations and Management Platform (OMP) System Administration*, Columbus, OH, USA, August 1996.
 - *CL1001X: AUTOPLEX® System1000 Executive Cellular Processor*, Columbus, OH, USA, July 1996.
 - *UC1212: SOLARIS 2.X System Administration*, Columbus, OH, USA, June 1996.
 - *CL3800: Overview of Personal Communications Services (PCS) Switching Center*, Columbus, OH, USA, June 1996.

7. AFFILIATIONS

- The Institute of Electrical and Electronics Engineers (IEEE), Senior Member, since 2013.
- The Institute of Electrical and Electronics Engineers (IEEE), since 1997.
- The Association of Computing Machinery (ACM), since 2013.
- The Jordan Engineering Association (JEA), since 1990.