

# CURRICULUM VITAE

## **Professor Omar Musa Hasan (Bani Ahmad)**

*Princess Sumaya Univesity for Technology*

*Communication Engineering Dept*

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### **1. Personal Data**

Date of Birth: July 26, 1964

Nationality: Jordan / USA

### **2. Education**

- Ph.D., Electrical Engineering (Communication Eng.), 1996, New Mexico State University, Las cruces, New Mexico, USA  
Thesis Title: Narrow-Band Duobinary FM over Mobile Channels
- M.Sc., Electrical Engineering (Communication Eng.), 1989, New Mexico State University, Las cruces, New Mexico, USA
- B.Sc., Electrical Engineering, 1996, New Mexico State University, Las cruces, New Mexico, USA

### **3. Employment**

#### **Academic Positions**

- Associate Professor ( sabbatical leave), Electrical Engineering Department, American University of Madaba, Madaba, Jordan  
Sept. 11 , 2011 – Sept. 12, 2012
- Associate Professor, Communication Engineering Department, Princess Sumaya University for Technology, Amman, Jordan  
June 1<sup>st</sup>, 2006 – current.
- Assistant Professor, Electronic Engineering Department, Princess Sumaya University for Technology, Amman, Jordan.  
Sept. 14, 1997- Sep. 17/2005
- Assistant Professor, Electrical & Computer Engineering Department, Applied science University, Amman, Jordan.  
15/9/1996-13/9/1997.
- Graduate Assistant, The Manuel Lujan, Jr. Center for Space Telemetering and Telecommunications, New Mexico State University, Las Cruces, New Mexico, USA.  
Jan. 15, 1996 - August. 09, 1996.
- Graduate Assistant, Electrical & Computer Engineering Department, New Mexico State University, Las Cruces, New Mexico, USA.
- Graduate Assistant, Electrical & Computer Engineering Department, New Mexico State University, Las Cruces, New Mexico, USA.  
January 12, 1991 – May 13, 1994.
- Instructor, Department of mathematics, El Paso community College, El Paso,

Texas, USA.

August, 1992- May 12, 1994.

- Graduate Assistant, Electrical & Computer Engineering Department, New Mexico State University, Las Cruces, New Mexico, USA.  
January 18, 1988 – December 16, 1988.
- Teaching Assistant, Department of mathematics, New Mexico State University, Las Cruces, New Mexico, USA.  
May 23, 1988 –August 04, 1988.  
January 15, 1991- Dec. 14, 1991.
- Undergraduate Assistant, Electrical & Computer Engineering Department, New Mexico State University, Las Cruces, New Mexico, USA.  
August 18, 1986 –May 15, 1987.

### **Administrative Positions**

- Electronic & Communication Engineering Department Chairman, Amman Al-Ahliyya Amman University , Jordan, Sep. /2020 – current
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- Erasmus + (International credit Mobility) Program Coordinator, Princess Sumaya University for Technology, Amman, Jordan, Sep. 20, 2015 – current.
- Erasmus Mundus (scholarship and mobility) Program Coordinator, Princess Sumaya University for Technology, Amman, Jordan, Sep. 16, 2012 – current
- Dean of Students, American University of Madaba, Madaba, Jordan, Sep. 11/2011 – Sep. 13/2012.
- Electrical Engineering Department Chairman, American University of Madaba, Madaba, Jordan, Sep. 11/2011 – Sep. 13/2012.
- Dean of Student Affairs, Princess Sumaya University for Technology, Amman, Jordan, Sep. 12/2010 – Sep. 9/2011.
- Communication Engineering department Chairman, Princess Sumaya University for Technology, Amman, Jordan, Sept. 18, 2005- Sept. 9/2010.
- Founder & coordinator of PSUT entrepreneurship program (Jordan connect), supported by Jordan investment Board and Swedish entrepreneurship program,
- Sweden connect, 2001-2002.

### **Work Experience**

- Consultant, Global Cardiac Monitors, LLC, Houston, Texas, USA.  
2013-current
- Cardiac Telecommunications, Research and development division, Webster, Texas, USA. Head of research group, project manager for data reliability.

May 12, 2000 - October 01, 2000.

- Physical Science Laboratory, design engineer, Radio Frequency and Digital Design Division, Las cruces, New Mexico, USA.  
One year project, 1992.
- Physical Science Laboratory, design engineer, Radio Frequency Division, Las cruces, New Mexico, USA.  
May 1991-Sept. 1991.
- Buchanan and Associates, System and project Manager, El Paso, Texas, USA, 1991-1995.
- Intelligent Technology Incorporated, System Analyst, Las cruces, New Mexico, USA, August 1989-May 1992.

#### 4. **Research Interests**

Wireless optical communications, low power coding schemes.

#### 5. **Membership in Scientific Societies and Associations**

Jordan Engineers Association member, 1998 – Present.

#### 6. **Honors and Awards**

- The 9th National Technology Parade, First Place Award for supervising senior design project titled " design of a real time wireless medical data system (EKG signal)", Al-Ahliyya Amman University, Amman, jorda, 2016.
- Princess Sumaya University best researcher award, 2015.
- Appreciation letter by the president of the American University of Madaba for being distinguished during my sabbatical year, 2012.
- The 4th National Technology Parade, technology design sector, First Place Award for supervising senior design project titled " Mimix Sign Language Translator ", Philadelphia University, Amman, Jordan, 2011.
- Appreciation letters by the president of Princess Sumay University for Technology for many distinguished tasks accomplished, volunteered work and funding.

#### 7. **Fellowships and Scholarships**

- Technical University of Berlin, July – August 2015.
- Technical University of Berlin, August – Sept. 2013.
- Scholarship, Jordan Armed Forces, 1982.

#### 9. **Teaching Experience**

- ***Graduate Courses***

|                               |       |
|-------------------------------|-------|
| Stochastic Processes          | 23701 |
| Digital Communications        | 23702 |
| Coding Theory                 | 23705 |
| Advanced Topics in Comm. Eng. | 20719 |

- ***Undergraduate Courses***

|                           |       |
|---------------------------|-------|
| Radar Systems             | 23573 |
| Data Communications       | 23354 |
| Digital Signal Processing | 23571 |

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|-------------------------|-------|
| Coding and Cryptography | 23554 |
| Cellular Communications | 23552 |
| Optical Communications  | 23551 |
| Digital Communications  | 23451 |
| Analog Communications   | 23353 |
| Signal & Systems        | 23351 |
| Automatic Control       | 24471 |
| Electric Circuits (1)   | 24221 |
| Electric Circuits (2)   | 24222 |
| Data communications     | 23354 |
| TV Engineering          |       |

#### **10. Supervision of Master Thesis**

- Supervisor, Thesis Title “Performance Evaluation of Spatial Diversity Techniques in Transdermal Optical Communications with Pointing Errors, Summer 2020.
- Supervisor, Shahd Imad Tantawi, Thesis Title “ Performance of DEPSK System over Gamma-Gamma Distributed FSO Channel in the Presence of Pointing and Blockage Errors under Different Weather Conditions, graduation datw Summer 2019.
- Supervisor, Ziad Talal Almesleh, Thesis Title “ Digital Image Transmission using Enhanced Turbo Codes”, Spring 2017/2018.
- Supervisor, Salah Al-Deen Almousa, thesis title “ Performance of Double-Weibull FSO System with Pointing Error and Channel Conditions”, Fall 2015/2016.
- Supervisor, Ahmad Salem Al Fetori, Thesis Title: “ Performance improvement of Optical Wireless System Using Iterative Decoding Over Turbulence Channel, expected to graduate Fall 2016/2017.
- University of Houston, Houston, Texas, 2000.

#### **11. Grants**

- Khalifeh Advanced Est. Aktco ( \$ 15,000.00), Amman, Jordan, PSUT needy and excelled student fund program, 2009.
- Motorola, USA (\$ 25,000.00): PSUT needy and excelled student fund program, 2005.
- Higher Council for Science and Technology ( 5000 JD): Development and utilization of DC and AC inverters in solar cells energy, Amman, Jordan, 1999.

#### **12. Funded Projects**

- **Healthy Housing for the Displaced project, funded by United Kingdom Engineering and Physical Science Council.**
- **Erasmus Mundus Projects ( scholarships and mobility)**
  - AVEMPACE I-III, Erasmus Mundus Action 2, Strand 1 Project, TU-Berlin, Germany, 2011-2017.
  - EPIC I-II, Erasmus Mundus Action 2, Strand 1 Project, Cardiff Institute of Technology, UK, 2016.
  - PEACE I-II, Erasmus Mundus Action 2, Strand 1 Project, Universidade de Santiago de Compostela, Spain, 2012-2016.
  - DUNIA BEAM, Erasmus Mundus Action 2, Strand 1 Project, University of Pavia, Italy, 2012, <http://www.duniabeam.eu/>.
  - PHOENIX, Erasmus Mundus Action 2, Strand 1 Project, University of Almeria, Spain, 2013-2017.

- HERMES, Erasmus Mundus Action 2, Strand 1 Project, Université d'Aix-Marseille, France, 2013-2017.
- JOSYLEEN, Erasmus Mundus Action 2, Strand 1 Project, Lund University, Sweden, 2007-2010.
- **International credit Mobility ; Sept. 2015 – May 2017**
  - University of Almeria, Spain
  - University of Deusto, Spain
  - Ataturk University, Turkey
  - Middle-East technical University, Turkey
  - Middle East Technical University, Turkey
  - Sapienza University, Italy
  - Riga University, Latvia
  - Vilnius university, Lithuania
  - Hasselt University, Belgium
- **Tempus Projects**
  - Enhancing Quality for Technology-Enhanced Learning at Jordanian Universities, Princess Sumaya University for Technology, Jordan, 2013-2016
  - Modernisation of Institutional Management of Internationalisation in South Neighbouring Countries, University of Barcelona, Spain, 2013-2016.
  - Towards an Internationalisation of Higher Education Network for MEDA Region, (TIES), 2009-2013, [www.ties-project.eu](http://www.ties-project.eu).
- **Erasmus+ European projects ( capacity building projects)**
  - Erasmus+, Modernisation of Institutional Management of Innovation and Research in South Neighbouring Countries, University of Barcelona, Spain, 2015-2018.
  - A Bottom-up Approach for Opening Up Education in South-Mediterranean Countries, UNIMED, Italy, 2015-2018
  - Project manager, Promotion of Innovation Culture in the Higher Education in Jordan – INVENT, Jordan University for Science & Technology, 2015-2018.
  - Project manager, Improving Higher Education Quality in Jordan using Mobile Technologies for Better Integration of Disadvantaged Groups to Socio-economic Diversity/mEQUITY, Plovdiv, Plovdiv University “Paisii Hilendarski”, Bulgaria, 2015-2018.

### 13. Membership of Committees

- **Organizing Committee**
  - *Second Turkish Arab Congress on Higher Education TACHE 2016, student mobility programme committee, April 26-30, Istanbul, Turkey, 2016.*
  - *2nd Arab Euro Conference on higher education, Amman, Jordan, 2015.*
  - *Organizing committee, IEEE Engineering Education Conference, EDUCON 2011.*
  - *14th Jordan Science Week, Science and Technology for Sustainable Development, Amman 3-6 May 2009.*
  - *International Conference on Interactive Mobile and Computer Aided Learning, 2006-2009.*
  - *Jordan vision initiative 2020, phase II, educational sector team, USAID - funded AMIR program, 2004-2005.*
- **University**

- *Scientific research committee chairman, King Abdullah II Faculty of Engineering, 2015/2016.*
- *Tender committee chairman (substitute position), June 2007-Sept. 2007.*
- *Dean Council committee, member, 2010/2011.*
- *College of Engineering council committee, 2005-2010, 2014-2016.*
- ***Promotion committee (academic ranking) chair and member, king Abdullah II faculty of engineering, 2012-current.***
- *University promotional & marketing campaign committee chairman, 2007-2010.*
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#### **14. Professional and Scientific Meetings**

##### ***Scientific Meetings Organized***

- Second Turkish Arab Congress on Higher Education TACHE 2016, April 26-30, Istanbul, Turkey, 2016.
- Second Arab Euro Conference on higher education, Amman, Jordan, 2015
- International Conference on Interactive Mobile and Computer Aided Learning, 2006-2009.

##### ***Participation in Scientific meetings***

- IEEE Engineering Education Conference, EDUCON 2011 Amman,, Jordan, 2011.
- Invited session manager, Interactive conference on computer aided learning (ICL), Vilach, Austria, 2006.
- The 1998 International Conference on Communication, Computer and Power ICCCP98 , Muscat - Sultanate of Oman, Dec. 7-10, 1998.

#### **15. Publications**

##### **• Papers in refereed journals**

1. Omar M. Hasan, Average Capacity Evaluation Performance for Transdermal Optical Wireless Communications under the Effect of Pointing Error", International Journal of Online and Biomedical Engineering (iJOE), accepted for publication, August 01, 2022
2. A. Y. Al-Zoubi, Ashraf Tahat, Rami Wahsheh, Mohammad Taha, Luae' Al-Tarawneh, Omar Hasan, "A Bachelor Degree Program in IoT Engineering: Accreditation Constraints and Market Demand", International Journal: Engineering Pedagogy, Vol. 12, No. 4, July 2022, pp. 17-34.
3. F. Morana, D.Fosasa, D.Coleya, S. Natarajana, J.Orrb, O. BaniAhmad, "Improving thermal comfort in refugee shelters in desert environments", Energy for Sustainable Development, Volume 61, April 2021, Pages 28-45
4. Osama Abu Sharkh, Esam AlQaralleh and Omar Musa Hasan, "Adaptive device-to-device communication using Wi-Fi Direct in smart cities", Wireless Networks journal, Vo. 23, pp. 2197-2213, 2017.
5. Omar M. Hasan, Mohamed Taha, "Optimized FSO system performance over atmospheric turbulence channels with pointing error and weather conditions", Radioengineering Journal, Vol. 25, No. 4, pp. 658-665, Dec. 2016.
6. Omar M. Hasan, Mohamed Taha and Osama Abu Sharkh, "Outage capacity and outage rate performance of MIMO free-space optical system over strong turbulence channel", Journal of Modern optics, Vol. 63, Issue 11, pp. 1106-1114, June 2016.

7. Omar Hasan, "Performance of heterodyne differential phase-shift keying system over double Weibull free-space optical channel", *Journal of Modern optics*, Vol. 62, Issue 11, pp. 869-876, June 2015.
  8. Mohammad Taha, Dia I. Abu-Al-Nadi and Omar Musa Hasan, "Model Order Reduction Using Variable Dimension PSO", Accepted for publication, *Advanced Science Letters*, Dec. 04, 2015. Paper presented at the 2015 International Conference on Control Theory and Its Application (CNTIA'2015), 15 – 17 December, 2015 in Melaka, Malaysia.
  9. Omar M. Hasan, "Bit Error Rate and Outage Rate Results for Non-Zero Turbulence Cells over Gamma-Gamma Free-Space Optical Wireless Channel", *Journal of Optical Communication*, Vol. 34, Issue 4, pp. 385-391, Nov. 2013.
  10. Akram Abu-Aisheh, Sameer Khader, and Omar Hasan, "Implementation of Dual Use Fiber Optic Communications Laboratories", *International Journal of on-line Engineering (IJOE)*, Vol. 7, No. 2, 2011.
  11. Omar M. Hasan, "Performance of Quantized Turbo Decoding for Decoders with Maximum a Posteriori Algorithm", *Wireless Personal Communications, an International Journal*, Vol. 41, no. 1, pp 99-110, 2007.
  12. Omar M. Hasan, "Iterative decoding for differentially encoded PSK", *WSWAS Transactions on Communications*, Issue 2, Vol.5, pp 380-391, 2006.
  13. A. Y. Al -Zoubi and Omar M. Hasan, "Microwave Hall Measurements on Biological and Organic Semiconductors", *Journal of Physics Conference series*, Vol. 13, pp. 430-433, 2005.
  14. Omar M. Hasan and Ahmad Hiasat, "Limiter Discriminator Detection of Narrow-Band FSK in a Land Mobile Channel", *International Journal of Communication Systems*, Vo. 17, Issue 1, pp 85-97, 2004.
  15. A. Hiasat and Omar M. Hasan, "Bit Serial Architecture for Rank Order and Stack Filter", *Journal of the VLSI Integration*, issue 4, Vol. 2, pp 3-12, 2003.
  16. A. Hiasat and Omar M. Hasan, "Combinatorial RNS Multiplier for Small and Medium Moduli", *WSWAS Transactions on Systems*, Issue 4, Vol. 2, pp 802 - 808 ,2003.
- Books and Book Chapters
    1. Sabina Jeschke, Olivier Frédéric Pfeiffer, Omar Musa Hasan and Erhard Zorn, " An Introductory Mathematics Computer Course as a Supplement to a Mathematical Bridge Course", *Automation, Communication and Cybernetics in Science and Engineering*, pp. 397-406, Book chapter, Springer 2014.
    2. Omar Hasan (Bani Ahmad), Jamal Rahal  
Book written in Arabic language for Al Quds Open University, Amman, Jordan.  
كتاب: مقدمة في تكنولوجيا المعلومات وانظمة الاتصالات  
منشورات جامعة القدس المفتوحة ، الطبعة الاولى 2008  
Introduction to Information Technology and Communication Systems.
  - Conference Presentations
    1. Mohamed Taha, Dia AbualnADI, and Omar Hasan, Lightning Impulse Parameters Estimation using Maximum Likelihood Criterion, 8th IEEE INTERNATIONAL CONFERENCE ON CONTROL SYSTEM, COMPUTING AND ENGINEERING (ICCSCE 2018), Penang, Malaysia, Nov. 23-25, 2018.
    2. Hasan, O, Taha, M. Asali, O, Daher, N., , E-learning Platform for Disadvantaged Groups, *Advances in Intelligent Systems and Computing*, Springer 2018.
    3. Hasan, Omar mousa; Taha, Mohamed Ali; Asali, Omar Hisham; Daher, Neda al, E-learning Platform for Disadvantaged Groups, 11th International Conference on

Interactive Mobile Communication Technologies and Learning, IMCL2017, Thessaloniki, Greece, Nov. 30 – Dec. 01, 2017.

4. Mohamed Taha, Dia Abualnadi, Omar Hasan, and Eyad Filat, " Lightning Impulse Parameters Estimation using Fractional Model Order Reduction", 7th IEEE International Conference on Control Systems, Computing and Engineering (ICCSCE 2017), Penang, Malaysia, Nov. 24-26, 2017.
5. Omar Hasan and Salah Al Mousa, Performance of FSO system over Double Weibull Turbulence with Pointing Error, 5th IAJC/ISAM Joint International Conference, Orlando, U.S.A., November 6-8, 2016.
6. Omar Hasan and Akram Abu Aisheh, Performance of FSO system over Double Weibull Turbulence with Pointing Error, 5th IAJC/ISAM Joint International Conference, Orlando, U.S.A., November 6-8, 2016.
7. Mohammad Taha, Dia I. Abu-Al-Nadi and Omar Musa Hasan, "Model Order Reduction Using Variable Dimension PSO", 2015 International Conference on Control Theory and Its Application (CNTIA'2015), Malaysia.
8. Sabina Jeschke, Olivier Frédéric Pfeiffer, Omar Musa Hasan and Erhard Zorn, " An Introductory Mathematics Computer Course as a Supplement to a Mathematical Bridge Course", the 2012 Annual America Society for Electrical Engineering (ASEE) annual conference, San Antonio, Texas, USA, 2012.
9. A. Y. Al-Zoubi, Omar Ata and Omar Hasan, "Microwave Engineering Education over the Web", FRONTIERS IN EDUCATION CONFERENCE 2012, Seattle, Washington, USA, October 3-6, 2012.
10. Abu-Aisheh, A., Khader, S., and Hasan, O., "Sustainable PV-powered FPGA-controlled high brightness LED illumination systems", IEEE EDUCON, pp.41-56, Amman, Jordan, 2012.
11. Akram A. Abu-aisheh, Omar M. Hasan, A. Al-zoubi, " RFID Design, Simulation, and Implementation", American Society for Engineering Education 2011, International Conference, Hartford, CT, USA, April 29-30, 2011.
12. Karam Abu-Aisheh, Tom E. Epped and Omar M. Hasan (otoum), " Remote laboratory collaboration plan in communications engineering", 2011 IEEE Global Engineering Education Conference (EDUCON), pp. 837-840, Amman, Jordan, 2011.
13. Akram Abu-Aisheh, Sameer Khader, and Omar Hasan, "Implementation of Dual Use Fiber Optic Communications Laboratories", 2011 IEEE Global Engineering Education Conference (EDUCON), pp. 74-79, Amman, Jordan, 2011.
14. Sameer Khader, Omar Hasan and Akram Abu-aisheh, "A case study of designed an e-learning course for electrical engineering students", Global Engineering Education Conference (EDUCON), 2012 IEEE, pp. 1-7, Marrakech, April 17-20, 2012.
15. A.Y. Al-Zoubi, Bassam Kahhaleh, Omar Hasan and Husam Kharouf "Future Potential of ICT Implementation in University eEducation in Jordan", Interactive Aided Learning ICL2007, Villach, Asutria, 2007.
16. A. Y. Al –Zoubi, Omar M. Hasan, Ashraf Tahat, "Mobile Virtual Experimentation Utilizing SMS ", Proceedings of the Fourth IASTED International Conference on Communications, Internet, and Information Technology, October 31-November 2, 2005, Cambridge, MA, USA.
17. Omar M. Hasan , "Bit Error Rate Performance For Narrow – Band FM Over Mobile Channels" , The 1999 International Conference on Communication, Computer and Power ICCPP98 , Muscat - Sultanate of Oman, Dec. 1998

References:

1. Professor Hisham Ghassib  
Princess Sumay University for Technology, Former President, Amman, Jordan.  
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2. Professor mshhour Al Refai  
Princess Sumay University for Technology, President, Amman, Jordan.  
[M.Refai@psut.edu.jo](mailto:M.Refai@psut.edu.jo), 0096277-739-3902.
3. Professor George Hazboun, Former President, American university of Madaba,  
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