

Curriculum Vitae

Fadi Alkhatib

Assistant Professor/ Head of the Department of Mechanical Engineering
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EDUCATION

PhD, Mechanical Engineering, December 2013

University of Wisconsin-Milwaukee

Minor: Engineering Mechanics

Thesis Title: **Techniques for Engine Mount Modeling and Optimization**

Master of Science, Engineering Mechanics, December 2004

University of Wisconsin-Milwaukee

Thesis Title: **Stress Computation and Fracture Prediction in the Femur's Neck due to Approximated Side Fall Conditions**

Bachelor of Science, Mechanical Engineering, June 2000

BirZiet University, West Bank.

Thesis Title: **A Comparison Study between the leading Air Conditioning Companies in the West Bank**

EMPLOYMENT SUMMARY

- **Head** of the Department of Mechanical Engineering, Australian College of Kuwait, August 2017 – Present.
- **Assistant Professor**, Department of Mechanical Engineering, Australian College of Kuwait, 2014 – Present.
- **Adjunct Professor**, Department of Mechanical Engineering, University of Wisconsin-Milwaukee, WI, USA, January 2014 – May 2014.
- **Instructor**, Department of Mechanical Engineering, University of Wisconsin-Milwaukee, January 2009 – December 2013.
- **Project Assistant**, Harley Davidson, Milwaukee, WI, January 2006 – December 2007.

- **Teaching Assistant**, Department of mechanical Engineering, University of Wisconsin-Milwaukee, January 2004 – May 2005.
- **Research Assistant**, Computational Mechanics Laboratory, University of Wisconsin-Milwaukee, January 2002 – December 2003.
- **Teaching Assistant**, Department of Mechanical Engineering, BirZiet University, September 2000 – January 2002.
- **Internship**, Jordan Phosphate Mines Company, Jordan, summer 1999 (2 months).

ACADEMIC & INDUSTRIAL EXPERIENCE

- **Head of the Department of Mechanical Engineering**, Australian College of Kuwait 2017 – present:
 - Chair of the departmental council.
 - Chair of the departmental appointment and promotion committee.
 - Chair of the school of engineering audit and accreditation committee.
 - Member of the school of engineering council.
 - Member of the school of engineering appointment and promotion committee.
 - Member of the school of engineering curriculum committee.
 - Member of the College CDIO committee.
- **Assistant Professor:** Department of mechanical engineering, Australian College of Kuwait, 2014 - present:
 - Grey Wolf Optimizer for Automotive Brake-By-Wire (MRB) System Design.
 - Wind turbines selections using optimization based on rated wind speed.
 - Assessment of potential fracture of the femur's neck during fall for different bone densities.
 - Multiscale modeling of soft tissue.
 - Biological mechanical testing machine
 - Rehabilitation machine
 - Analysis of variants within different models of diesel oil
 - Vibration analysis, shape and design of motorcycle mounting system subjected to shaking forces
 - Dynamic analysis and design of motorcycle mounting system subjected to rad loads.
- **Adjunct Professor**, Department of Mechanical Engineering, University of Wisconsin-Milwaukee, WI, USA, January 2014 – May 2014:

- Introduction to Finite Elements.
- **Instructor**, Department of Mechanical Engineering, University of Wisconsin-Milwaukee, WI, USA, January 2009 – December 2013:
 - Introduction to Robotics.
 - Introduction to Finite Elements.
 - Design of Machine Elements.
 - Machine Design I.
- **Project Assistant**, Harley Davidson, Milwaukee, WI, January 2006 – December 2007:
 - Create a power train envelop to detect its motion and direction:
 - Load recovery: Estimate structures durability based on scaled loads calculated from measured and FEA strains.
 - Stiffness reduction: Establish an equivalent system using reduced stiffness to substitute an existing big finite element model to ease computation.
 - Formulate a model that represents the nonlinear part of the stiffness using the concept of system ID.
- **Teaching Assistant**, Department of mechanical Engineering, University of Wisconsin-Milwaukee, January 2004 – May 2005:
 - Finite Element Analysis Lab using Matlab and ANSYS.
- **Research Assistant**, Computational Mechanics Laboratory, University of Wisconsin-Milwaukee, January 2002 – December 2003:
 - Biomechanics.
 - Advanced computational Finite Element Analysis.
 - Analyze the human femur fracture due to fall.
 - Explore the effect of age, sex, and bone density on bone fracture.
- **Internship**, Jordan Phosphate Mines Company, Jordan, summer 1999 (2 months):
 - Phosphate processing unit:
 - Crushers: After completing the mining steps and moving phosphate from the ore locations or the storage facilities to the crushers, it is then crushed, sieved, and sorted to the required size.
 - Ratio upgrading machines: he objective of having quality upgrading equipment, through washing the phosphate coming from the crushers, are removing impurities and lowering chlorine ratio.

- Handling and drying (kilns): This division is considered one of the main divisions and a special production division, where the last operation is done by drying phosphate and preparing it for the External Shipping division. The purpose of these special kilns is reducing moisture content in both the washed or normal phosphate, through generating hot gases to dry the phosphate.
- Heavy equipment maintenance unit.

ACADEMIC PROFICIENCY

- Optimization.
- Robotics.
- Finite element methods, theory and applications.
- Mechanical vibrations, linear and nonlinear.
- Design of machine elements.
- Theory of machines.
- Kinematics, forward and inverse.
- Solid mechanics, elasticity and continuum mechanics.
- Mechanics of Variations
- Project based learning.

TEACHING EXPERIANCE

- **Australian College of Kuwait (courses taught):**
 - Engineering plant design (16SMCE413).
 - Solid Mechanics (16SMCE322).
 - Statics & Dynamics (16SMCE311).
 - Engineering Design and Management Planning “PBL” (16SMCE321).
 - Engineering Skills “PBL” (16SMCE310).
 - 3-D CAD (15FMCE310).
 - Mechanical Engineering Workshop I (15FMCE120).
 - Engineering Drawing I (15FMCE111)
- **University of Wisconsin – Milwaukee (courses taught):**
 - Introduction to Robotics (MECHENG476).
 - Introduction to Finite Elements (MECHENG463).
 - Design of Machine Elements (MECHENG366).
 - Mechanical Design I (MECHENG360).

- **BirZeit University (teaching assistant):**
 - Technical Drawing (ENME121).
 - Mechanical Drawing (ENME223)
 - Fluid Mechanics I (ENME335)
 - Mechanical Engineering Lab (ENME411).

CURRICULUM DEVELOPMENT AND UNIT COORDINATION

- **Unit Coordination**
 - Engineering Plant Design (16SMCE413).
 - Solid Mechanics (16SMCE322).
 - Engineering Design and Management Implementation “PBL” (16SMCE321).
 - Statics and Dynamics (16SMCE311).
 - Engineering Mechanics (15FMCE213).
 - 3-D CAD (16SMCE210).
 - Engineering Drawing I (15FMCE111).
- **Unit Development**
 - Mechanical Systems (16SMCE423).
 - Machine Dynamics (under development).
- **Curriculum Development**
 - Review the Mechanical Engineering Department Curricula for both diploma and Bachelor programs.

MENTORING EXPERIENCE

- Ahmad AlShati (team leader), Gyrotonar machine, BSc Student, Australian College of Kuwait, Kuwait, 2018.
- Khalid AlAzimi (team leader), ACL Rehabilitation Chair, Australian College of Kuwait, Kuwait, 2018.
- Ali Boftain (team leader), Biological tensile testing machine, BSc Student, Australian College of Kuwait, Kuwait, 2018.
- Ali AlGhazam (team leader), Diesel like fuel produced from waste engine oil collected from car service station in Kuwait, 2016.

- Fikri ALSayed (team leader), Increasing concrete strength using rubber granules, Australian College of Kuwait, 2016.

SERVICE & LEADERSHIP

- Mentoring graduation projects.
- Working on two funded projects.
- Member of Engineers Australia (EA)
- Member of the American Society of Mechanical Engineers (ASME)
- Member of the Arab American Association of Engineers Architects (AAAEA).
- Member of Research & Faculty Development.
- Member of the Credit Transfer Committee.

HONORS & AWARDS

- Office Building Energy Savings by Solar Window Films for Reducing Cooling Loads in Summer of Kuwait, Kuwait Foundation for Advancement in Science (KFAS), 2018, Co-I, (\$ 23,000 U.S).
- Associated factors between healing/tear connective tissues/menisci and knee joint osteoarthritis, ACK research center, Kuwait, 2017-2018, Co-I (\$ 3800 U.S).
- Awarded the Chancellor's Graduate Student Award, 2012-2013.
- Chancellor Graduate Student Award, 2003 and 2004.
- Arab American Association of Engineers and Architects Scholarship, 2003.

PROFESSIONAL DEVELOPMENT

- Recent Development and Applications of Economically Sustainable Membrane Technologies in Kuwait workshop, ACK, Kuwait, 2019.
- ISO 9001:2015 Appreciation & Interpretation, ACK, Kuwait, 2019.
- ISO 9001:2015 Internal Quality Management System Auditor, ACK, Kuwait, 2019.
- E-Vehicle Workshop, Kuwait, 2019.
- Solar Decathlon – Middle East, Dubai, UAE, 2018.
- PBL Symposium, ACK, Kuwait, 2017 & 2018.
- Writing SMART Objectives in the Lesson Plan, ACK, Kuwait, 2017.

- Mentoring and Leadership Part 1 – Evaluating classroom, ACK, Kuwait, 2017.
- Meeting the NBAQ Accreditation Challenge, Kuwait, 2017.
- Strategic Planning, ACK, Kuwait, 2017.
- Certificate IV in Training and Assessment (TAE40110), 2016.
- Address Adult Language, Literacy and Numeracy Skills (LLN), 2015.
- Energy Harvesting & Nonlinear Dynamic Techniques for Young Scientists' Development, ACK, Kuwait, 2015.
- PBL Workshop at Aalborg University, Aalborg, Denmark, 2015.

PUBLICATIONS UNDER PREPARATION

- **Alkhatib, F.**, Mbarki, R., Adouni, M., Multiscale Approach in the Computational Modeling of the Cruciate Ligaments under Functionally Loading Conditions, 2019.
- Adouni, M., **Alkhatib, F.**, Mbarki, R., A computational framework for load mediated ligament damage at the tropocollagen level, 2019.

PUBLICATION IN PEER REVIEWED JOURNALS

- Ehab Bani-Hani, **Fadi Alkhatib**, Ahmad Sedaghat, Preparation, Characterization and Combustion of Deisel-Like Fuel Produced from Wasted Engine Oil, Alexandria Engineering Journal. (Under Review).
- Younis A., Dong Z. and **Alkhatib F.**, Grey Wolf Optimizer for Automotive Brake-by-Wire (MRB) System Design. Proceeding of the Canadian Society for Mechanical Engineering and CFD Society Canada International Congress CSME-CFDSC Congress 2019, June 2-5, 2019, London, ON, Canada.
- Raouf Mbarki, **Fadi Alkhatib**, Malik Adouni, Multiscale Syntheses of Knee Collateral Ligament Stresses: Aggregate Mechanics as a Function of Molecular Properties, International Journal of Medical, Health, Biomedical, Bioengineering and Pharmaceutical Engineering, Vol. 12, issue, 8, 2018, pp 388-398.
- E. Bani-Hani, A.AlShalabi, **F. Alkhatib** et al, Factors Affecting the Team Formation and Work in Project Based Learning (PBL) for Multidisciplinary Engineering Subjects, Journal of Problem Based Learning in Higher Education, Vol. 6, No. 2, 2018, pp 136-143.
- Ahmad Sedaghat, **Fadi Alkhatib**, Armin Eilaghi, Mohamad Sabati, Laila Borvayeh and Ali Mostafaeipour, "A New Strategy for Wind Turbine Selection Using Optimization Based on Rated Wind Speed", Science Direct, 2018 (accepted).

- **Alkhatib F**, Rahman A and Mahamid M. Assessment of Potential Fracture of the Femur's Neck during Fall for Different Bone Densities. SM J Biomed Eng. 2018; 4(1): 1027.
- **Fadi Alkhatib**, Anoop K. Dhingra, “Vibration Analysis, Shape and Design of Motorcycle Mounting System Subjected to Shaking Forces”, International Journal of Engineering Sciences and Research Technology, Vol. 5, issue 10, 2016, pp. 698-713.
- **Fadi Alkhatib**, Anoop K. Dhingra, “Dynamic Analysis and Design of Motorcycle Mounting System Subjected to Road Loads”, International Journal of Mechanical Engineering and Applications, Vol. 4, No. 5, 2016, pp. 166-175.
- Bani-Hani, E., **Alkhatib, F.**, and Khanafer, K., “Analysis of Variants within Different Models of Diesel Oil Volatilization Process using various Soil Materials”, Special Topics and Reviews in Porous Media, 2015, Vol 6, (3), 1-6.

CONFERENCE PUBLICATIONS

- Hassan Salti, **Fadi Alkhatib** at el, Engineering Education: Institutionalization, Internationalization and Graduate Attributes, Proceedings of the 15th International CDIO Conference, Aarhus University, Aarhus, Denmark, 2019.
- Ehab Bani-Hani, **Fadi Alkhatib**, Ammar Al Shalabi. “Team Formation Challenges in Project Based Learning (PBL) Multidisciplinary Teamwork”. Proceedings of Project Based Learning (PBL) Symposium – Preparing Students for the Workplace, Australian College of Kuwait, Mishref, Kuwait, 13th March, 2016.
- Naser Ali, Mohamed Sebzali, Altaf Safar, **Fadi Alkhatib**, “A Feasibility Study of Using Waste Cooking Oil as a Form of Energy in Kuwait”, SMART2015, ACK, Kuwait, 22-25 November 2015.
- **Alkhatib, F.**, Dhingra, A. K., “Shape Optimization of Engine Mounts for Enhanced Vibration Isolation”, ASME 2013 International Mechanical Engineering Congress & Exposition.

LANGUAGE PROFICIENCY

- **English:** Verbal and written communication skills
- **Arabic:** Verbal and written communication skills