

MADHAR A. HADDAD

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SUMMARY

Excellent skills in Structural Engineering supported by a B.Sc., a M.Sc., a Ph.D. and two Post-Doctoral fellowships in Structural Engineering. Structural dynamics of various steel and concrete structures. Experience with numerical modeling and experimental work in various aspects of structures. Familiar with the AISC 2010 and the ACI 318-11 standards in addition to the Canadian codes, as well as several well-known computer software packages. Exceptional capability in finite element analysis using Abaqus and Patran. Extensive experience in the analysis, design, and experimental investigation of steel braces subject to dynamic and seismic loading, especially connections. Experience in the dynamic analysis of composite beams and plates through numerical modeling. Several papers are being published in refereed journals and conference proceedings. Have teaching and teaching assistant experience in various Structural Engineering courses. In addition I am familiar with the American, Canadian, British, and New Zealand/Australian systems of teaching and research.

EDUCATION

Ph.D., Civil Engineering (Structures), University of Calgary, Calgary, Alberta, Canada.
Dissertation Title: *Design of Concentrically Braced Steel Frames for Earthquakes.*

B.Sc., and **M.Sc.**, Civil Engineering (Structures), Jordan University of Science and Technology, Irbid, Jordan. Thesis Title: *Free Vibration of Composite Plates using the Finite Difference Method.*

PROFESSIONAL EXPERIENCE

Research Experience

Post-Doctoral fellow, Ecole Polytechnique of Montreal. Project funded from NSERC Canada (Natural Science and Engineering Research Council). The project is about the seismic design and behavior of concentrically braced steel frames. **Advisor:** *Canada Research Chair in Earthquake Engineering.*

Post-Doctoral fellow, University of Calgary. Project funded by the ISIS Canada Network of Centers of Excellence (Intelligent Sensing of Innovative Structures). The project is about FRP (fiber reinforced polymers) masonry walls subjected to triangular lateral earth pressure. **Advisor:** *Killam Research Chair.*

Ph.D. student, University of Calgary. Project funded from NSERC Canada (Natural Science and Engineering Research Council). The project is about the design of concentrically braced steel frames for earthquakes. **Advisor:** *Department Head/University of Calgary.*

M.Sc. student, Jordan University of Science and Technology, Irbid, Jordan, working on composite materials, specifically, the free vibration of composite plates, using the finite difference method. The work was presented at the ICCE, Las Vegas, July 5-11, 1998. **Advisor:**

Professor of Civil Engineering (B.Sc., and M.Sc., University of Tennessee, Ph.D. University of Southern California).

Teaching Experience

Assistant Professor, Department of Architectural Engineering, UAE University, Al Ain, United Arab Emirates. I taught the following courses:

Reinforced Concrete Design for Arch. Eng., CIVL 457, Intermediate Building Design Studio, ARCH 335, Engineering Practice and Entrepreneurship, GENG 315, Graduation Project I, ARCH 585, Graduation Project II, ARCH 590.

Served as a member in several committees: Architectural design and graduation-project courses committee, department publications and web page committee, procurement, structure, building construction and management committee.

Assistant Professor, Civil Engineering Department, Jerash University, Jerash, Jordan. I taught the following courses:

Statics (ENCI 203), Engineering Mechanics (ENEL 201), Mechanics of Materials (ENCI 205), Structural Analysis I (ENCI 306), Structural Analysis II (ENCI 402), Engineering Computations (ENCI 301), Building Construction (ENCI 401), Reinforced Concrete Design I (ENCI 403), Reinforced Concrete Design II (ENCI 503), Structural Steel Design (ENCI 404), and Matrix Analysis of Structures (ENCI 512).

Helped establish the Civil Engineering Department with Professor Fouad Garibeh at Jerash University: Labs equipment, engineering workshops, study and strategic plans, library books, etc. This was a life time experience. Served as the head of the quality assurance committee of engineering and on every committee on the department and faculty level. Advisor for undergraduate student's graduation projects, mainly analysis and design of reinforced concrete houses and buildings.

Lecturer, Civil Engineering Department, Jordan University of Science and Technology, Irbid, Jordan, I taught the following courses:

- Advanced Structural Analysis and Design (ENCI 534)
- Engineering Computations (Numerical Methods for Engineers, ENCI 311)

Teaching Assistant, Civil Engineering Department, University of Calgary, Calgary, Alberta, Canada for the following courses: Statics (ENGG 201), Mechanics of Solids (ENGG 317), Mechanics of Materials (ENCI 416), Basic Structural Design (ENCI 451), and Theory of Structure II (ENCI 547).

Teaching Assistant, Civil Engineering Department, Jordan University of Science and Technology, Irbid, Jordan for the following courses: Statics, Strength of Materials, Structural Analysis I, Structural Analysis II, Mechanics of Materials I, Mechanics of Materials II Laboratory, Reinforced Concrete Design, Structural Steel Design, and Construction Management.

Industrial Experience

Dr. Haddad is familiar with the AISC, 2010 standards, and the ACI 318-11 standards in addition to Canadian standards.

Earthquake and Structural Dynamic consultant at the Royal Scientific Society in Amman, Jordan. The work includes consultations on the Jordanian Earthquake Building Codes and plans for building an Earthquake Engineering Laboratory at the Royal Scientific Society (RSS).

Design and Site Engineer: Nabeeh Gandah engineering office, Irbid, Jordan. The reinforced concrete buildings were designed according to ACI 318-89 standards.

ACTIVITIES

- Canadian Society of Civil Engineering, CSCE, Member.
- Jordanian Engineering Association, Member.

WORKSHOPS AND SEMINARS

- Attended the Fourth Conference on Scientific Research in Jordan. Landmark Amman Hotel, Amman, Jordan, November 7, 2009.
- Attended the Fourth Jordan National Tempus Day at Princess Sumaya University for Technology (PSUT), Amman, Jordan, February 25, 2009.
- Attended the workshop on Knowledge Management and Process Management Improvement organized by Princess Sumaya University for Technology-Jordan and Grenoble Ecole de Management-France, June 24, 2008.
- Attended a one day Bologna Awareness Seminar on Quality assurance and learning outcomes of higher education organized by Jordan University of Science and Technology, European Commission delegation, and the Erasmus Mundus External Cooperation Window Lot 3 Consortium, April, 21, 2008.
- Attended two days workshop on the sub-regional facility for cooperation in disaster reduction among Arab States, concerning earthquakes, organized by the United Nations Development Program, UNDP. Radisson Sas Hotel, Amman, November 21-22, 2006.
- Attended a one day technology seminar on realistic simulation with Abaqus: migrating to Abaqus for analysis-driven design. Hilton Montreal Dorval Airport. March 28, 2006.
- Took 30 credit hours Health and Safety on Construction Site Course, December 5, 2005 to January 18, 2006. CIMME, 1100 Ducas Street, LaSalle (Quebec), H8N 3E6.
- Attended a complementary one day technology seminar about aerospace applications with Abaqus. Hilton Montreal Dorval Airport. April 12, 2005.
- Attended the North American Steel Construction Conference (NASCC). April 6-9, 2005, Montreal, Canada. Also attended two short courses: a) Steel Design after College, and b) Seismic Braced Frames-Design Concepts and Connections.
- Attended and participated in the seminar series organized by the structural engineering group at Ecole Polytechnique of Montreal, 2005-2006.
- Attended and participated in the graduate seminar series, during my Ph.D. study, organized by the Civil Engineering Department at the University of Calgary, 2001-2003.
- Attended two weeks workshop on using finite element packages (Abaqus and Ls-dyna) organized by the Civil Engineering Department, University of Akron. Akron, Ohio, 2000.
- Attended the 5th U.S. National Congress on Computational Mechanics. Boulder, Colorado, August 4-6, 1999.

REFEREED PUBLICATIONS

- **Haddad M.A.**, Parsekian, G.A., and Shrive, N.G. Strengthening Concrete Masonry with Glass Fibre Reinforced Polymer. *Eleventh North American Masonry Conference, 11NAMC, Minneapolis, MN, USA, June 5-8, 2011.*
- **Haddad, M.A.**, Brown, T.G. and Shrive, N.G. Finite Element Modeling of Concentric HSS Braces under Cyclic Loading. *Canadian Journal of Civil Engineering, Vol. 38, No. 5, May 2011. Pages 493-505.*
- **Haddad M.A.**, Brown, T.G. and Shrive, N.G. Experimental Cyclic Loading of Concentric HSS braces. *Canadian Journal of Civil Engineering, Vol. 38, No. 1, January 2011. Pages 110-123.*
- **Haddad M.A.**, Shaheen E., Parsekian, G.A., Tilleman, D., and Shrive, N.G. Strengthening of a Concrete Masonry Wall Subjected to Lateral Load with Sprayed Glass-Fibre-Reinforced Polymer. *Canadian Journal of Civil Engineering, Vol. 37, No. 10, October 2010. Pages 1315-1330.*

- Tremblay, R., **Haddad, M.**, Martinez G., Richard, J., and Moffatt, K. Inelastic Cyclic Testing of Large Size Steel Bracing Members. *Proceedings of the 14th World Conference on Earthquake Engineering*. October 12-17, 2008. Beijing, China.
- **Haddad, M.A.**, and Tremblay, R. Influence of Connection Design on the Inelastic Seismic Response of HSS Steel Bracing Members. *Proceedings of the 11th International Symposium and IIW International Conference on Tubular Structures*. August 31 to September 2, 2006, Quebec City, Canada.
- **Haddad, M.A.**, Brown, T.G. and Shrive, N.G. Finite Element Modeling of Concentrically Braced Steel Frames for Earthquakes. *Proceedings of the 13th World Conference on Earthquake Engineering*. Vancouver, B.C., Canada. August 1-6, 2004. Paper No. 2816.
- Numayr, K.S., **Haddad, M.A.** and Ayoub, A.F. Investigation of Free Vibration of Composite Beams by using the Finite Difference Method. *Journal of Mechanics of Composite Materials*, Volume 42, No. 3, May-June 2006, Pages 231-242.
- Numayr, K.S., Haddad, R.H. and **Haddad, M.A.** Free Vibration of Composite Plates using the Finite Difference Method. *Thin-Walled Structures*, Volume 42, No. 3, March 2004, Pages 399-414.
- **Haddad, M.A.** Free Vibration of Composite Plates using the Finite Difference Method. M.Sc. Thesis. Civil Engineering Department. Jordan University of Science and Technology, Irbid, Jordan, 1998.
- **Haddad, M.A.** Design of Concentrically Braced Steel Frames for Earthquakes. Ph.D. Dissertation. Civil Engineering Department. University of Calgary, Calgary, Alberta, Canada, 2004.

AWARDS

- Selected in the “Eye on Ideas” graduate studies newsletter, issued by the University of Calgary, 2004.
- **Bruce M. Irons Memorial Scholarship**, awarded by the Civil Engineering Department, University of Calgary for the best finite element work of the year 2002-2003.
- Two times on the **Department honor list** (undergraduate).

VOLUNTEER WORK

- **Worked as a lecturer** at the Universities Gem Cultural Centre. The centre offers strengthening courses in different topics including Civil Engineering courses
- **Worked as a RAMP** (Residence Academic Mentor Program) at residence services at the University of Calgary.

GRADUATE COURSES

Elasticity, Advanced Composite Materials, Advanced Engineering Mathematics, Seismic Analysis and Design, Fracture Mechanics, Serviceability of Concrete Structures, Structural Steel Design, Constitutive Modeling, Structural Dynamics, Finite Element Modeling, Advanced Mechanics of Materials, Structural Mechanics, Numerical Methods for Structural Engineers, Advanced Reinforced Concrete, Advanced Concrete Technology, Structural Stability, Finite Element Method, Matrix Analysis of Framed Structures.

COMPUTER SKILLS

Microsoft Word, Excel, PowerPoint, Word Perfect, Mathematica, Matlab, AutoCAD, CorelDRAW, FORTRAN Programming, and Finite Element Packages: Abaqus Standard and Explicit, Patran, Ls-dyna, Etabs, Staad Pro. and Sap 2000.