
● WORK EXPERIENCE

2018 – CURRENT – Beirut, Lebanon

MATHEMATICS INSTRUCTOR – LEBANESE INTERNATIONAL UNIVERSITY

Courses Taught:

Math100, College Algebra
Math161, Basics of Mathematics
Math210, Calculus II
Math260, Discrete mathematics
Math260L, Discrete Mathematics Lab
Math225, Linear algebra with applications
Math490, Modern Topics in Algebra
Math502, Abstract Algebra

2011 – 2013 – Tyre, Lebanon

MATHEMATICS TEACHER SECONDARY SCHOOL – AL-AMJAD LEBANESE HIGH SCHOOL

- taught Math to grades 10,11, and 12 with 90% passing percentage.
- came up with performance improvement plans for under-performing students in consultation with parents and administrative staff.

2009 – 2013

TUTORING MATH COURSES FOR UNIVERSITY AND HIGH SCHOOL STUDENTS.

● EDUCATION AND TRAINING

11/2013 – 02/2017 – Piazzale Aldo Moro 5, Rome, Italy

PH.D IN MATHEMATICS, XXIX CYCLE. – La Sapienza University of Rome

Thesis Title : PDE and Dynamical Methods for Weakly Coupled Hamilton-Jacobi Systems.

Classification: Excellent

Thesis defense: February, 2017

Advisor : Prof. Antonio Siconolfi.

Committee: Piermarco Cannarsa, Albert Fathi, Andrea Davini, Maxime Zavidovique.

2011 – 2013 – Saida, Lebanon

MASTERS OF SCIENCE IN MATHEMATICS. – Lebanese International University

Thesis Title (defended in July 2013) : Analysis of parabolic/Hamilton-Jacobi systems modelizing the dynamics of dislocation densities in a bounded channel.

Advisor : Prof. Hassan Ibrahim.

Evaluation : Distinction (letter grade: A), first of promotion.

2008 – 2011 – Saida, Lebanon

BACHELOR IN MATHEMATICS – Lebanese International University

Evaluation : Distinction (major GPA: 4/4), first of promotion.

● **DIGITAL SKILLS**

Microsoft Office (Microsoft Word Microsoft Excel Microsoft Powerpoint Microsoft Access) | Latex | MathLab (Basic) | C++ Basic | Maple (basic)

● **LANGUAGES:**

Languages:

- Arabic : (Mother Language).
- English : (fluent).
- Italian : (Level A2).

● **HONOURS AND AWARDS**

Honours and awards

- 3-years Ph.D full scholarship from Sapienza University.
- First rank among all LIU branches in Mathematics (9 campuses).
- Masters scholarship from Lebanese International University.
- BS scholarship from Lebanese International University.

● **RESEARCH INTERESTS**

Research Interests

- Hamilton-Jacobi equation and viscosity solutions theory.
- Weak KAM theory.

● **PUBLICATIONS**

Publications and preprints

- A.Siconolfi, S.Zabad, Scalar reduction techniques to Hamilton-Jacobi systems, [*Nonlinear Differential Equations and Applications NoDEA*](#), 2018.
- H.Ibrahim, A.Siconolfi, S.Zabad, Cycle characterization of the Aubry set for weakly coupled Hamilton-Jacobi systems, *Communications in Contemporary Mathematics*,2017.
- S. Zabad and H. Ibrahim, Existence of Viscosity Solution for a Singular Hamilton-Jacobi Equation, *Arab Journal of Mathematical Sciences*, 2014.

● **CONFERENCES, WORKSHOPS AND SCHOOLS**

Conferences, Workshops and Schools

- Conference on Beyond Hamilton-Jacobi, 23-30 April 2014, Avignon, France.
- Workshop on Analysis and Geometry in Control Theory and its Applications, 9-13 June 2014, Rome, Italy.
- Workshop on New Perspectives in Optimal Control and Games, 10-12 Novembre 2014, Rome, Italy.
- Conference on Numerical Methods for PDEs : Optimal Control, Games, and Image Processing, 4-5 Dicembre 2014, Rome, Italy.
- Lebanese International Conference on Mathematics and Applications "LICMA'15", 26-29 May 2015, Beirut, Lebanon.
- The Hamilton-Jacobi Equation: at the crossroads of PDE, dynamical systems and geometry, 22 - 27 June 2015, Cortona (Italy).
- Partial Differential Equations and Applied Mathematics Meeting, 29-30 March 2016, Beirut, Lebanon.
- INdAM Workshop on PDE models for multi-agent phenomena, 28 November-2 December 2016, Rome, Italy.
- Lebanese International Conference on Mathematics and Applications "LICMA'17", 16-19 May 2017, Beirut, Lebanon.

● **INVITED SEMINARS**

Invited seminars

- "Scalar reduction techniques to Hamilton-Jacobi systems", American University of Beirut, March, 2016.
- "Analysis of Hamilton Jacobi systems/equations ", Lebanese International University, Beirut-Lebanon, March, 2016.
- "PDE methods to weakly coupled Hamilton Jacobi systems", Sapienza Università di Roma, November, 2016.
- "Dynamical aspects of weakly coupled Hamilton Jacobi systems", Sapienza Università di Roma, February, 2017.
- "PDE aspects to weakly coupled systems of Hamilton Jacobi equations", LICMA'17, Lebanese University, May, 2017.

● **SHORT VISITS**

Short visits

- Lebanese University, Faculty of Sciences-1, March 21-March 30, 2016.
- Lebanese University, Faculty of Sciences-1, July 8-July 20, 2015

● **RECOMMENDATIONS**

- Antonio Siconolfi , Associate professor at Sapienza University, (siconolfi@mat.uniroma1.it) .
- Haissam Chehade, Mathematics Coordinator at Lebanese International University, Saida Campus, (haissam.chehade@liu.edu.lb)
- Mohamad Muhieddine, Mathematics Coordinator at Lebanese International University, Beirut Campus, (mohamad.muhieddine@liu.edu.lb)