

# Hossam Eldin Shawky Mohamed Hassan (Hossam S. Hassan)

# **Professor of Applied Mathematics**

# **Acting Director**

Arab Academy for Science, Technology and Maritime Transport Khorfakkan – Sharjah, UAE

# **CURRICULUM VITAE**

# HossamEldin Shawky Mohamed Hassan (Current update: 26 January 2021) PERSONAL

Name	: HossamEldin Shawky Mohamed Hassan
Birth Date	: November 7, 1971
<b>Birth Place</b>	: Alexandria- Egypt
Nationality	: Egyptian
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Twitter	: <u>https://twitter.com/DrHossamShawky</u>
ResearchGate	: https://www.researchgate.net/profile/Hossam_Hassan9/?ev=hdr_xpi
Academia.edu	: https://aastmt.academia.edu/HossamEldinShawky
LinkedIn	: <u>https://www.linkedin.com/profile/view?id=125309082</u>
Google Scholar	: http://scholar.google.com/citations?user=Lq2ciJMAAAAJ&hl=en

# **EDUCATION**

#### [1] **B**.Sc.,

Electrical Engineering (Power Section), Faculty of Engineering, Alexandria University, Egypt, 1994, with general grade Very Good with Degree of Honour

#### [2] **M.Sc.**,

Applied Mathematics, Faculty of Engineering, Alexandria University, Egypt, 2001 *Thesis Title:* Group Method Applied to Boundary - Value Problems. *Thesis Advisors:* Prof. Dr. Mina B.Abd-el-Malek, and Dr. Nagwa A. Badran.

#### [3] **Ph.D.**,

Applied Mathematics, Faculty of Engineering, Alexandria University, Egypt, 2006 Thesis Title: Application of Group Method to the Dynamical Systems. Thesis Advisors: Prof. Dr. Youssef Zaki Boutros, Prof. Dr. Mina B.Abd-el-Malek and Dr. Nagwa A. Badran

# **PROFESSIONAL EXPERIENCE**

- [1] Teaching Assistant, Department of Engineering Mathematics and Physics, Faculty of Engineering, Alexandria University, Egypt (Sep.1994-Dec.1997)
- [2] Teaching Assistant, Department of Basic and Applied Science, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt (Jan.1998-June2001)
- [3] Assistant Lecturer, Department of Basic and Applied Science, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt (July 2001- Sep.2006)
- [4] Assistant Professor of Applied Mathematics, Department of Basic and Applied Science, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt (Oct.2006- Dec. 2010)
- [5] Associate Professor of Applied Mathematics, Department of Basic and Applied Science, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt (Jan. 2011-Jan 2015)
- [6] Vice Dean for Student Affairs, College of Engineering and Technology, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt (23 March 2014- 31 March 2016)
- [7] Professor of Applied Mathematics, Department of Basic and Applied Science, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt (Feb.2015-Present)

- [8] Assistant President for Student Affairs, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt (1 April 2016-14 May 2016)
- [9] Dean of Student Affairs, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt (15 May 2016-14 September 2019)
- [10] Head of Basic Sciences and Humanities Department Head of Student Life, Arab Academy for Science, Technology and Maritime Transport, Khorfakkan – Sharjah, UAE (15 September 2019-14 September 2020).
- [11] Acting Director Arab Academy for Science, Technology and Maritime Transport, Khorfakkan Sharjah, UAE (22 March 2020- Present).

### MAIN FIELDS OF INTEREST

3

- [1] Fluid Mechanics: Magnetohydroddynamics (MHD), Water Waves
- [2] Heat and Mass Transfer: Heat Convection, Heat Conduction
- [3] Mathematical Physics: Nonlinear Partial Differential Equations, Lie-Group

# **ACADEMIC HONORS & GRANTS**

- [1] **Research grant** from the American University in Cairo, Egypt (to carry out research in Turbulence Flow in Channel), Academic year 2006/2007, with value (LE 11700)
- [2] **The best lecturer** from the College of Engineering and Technology, Arab Academy for Science, Technology and Maritime Transport-Alexandria, Egypt, for the Academic year 2007/2008
- [3] **School grant** from the International Centre for Theoretical Physics (ICTP), Italy, "CIMPA-UNESCO-EGYPT School Recent Developments in the Theory of Elliptic PDE, Alexandria, Egypt" (31 January 2009- 9 February 2009)
- [4] **Research award** from Alexandria University- Alexandria, Egypt, for publishing the article "Solution of the Rayleigh problem for a power law non-Newtonian conducting fluid via group method" in a distinguished journal, (March 2010)
- [5] **Research award** from Alexandria University- Alexandria, Egypt, for publishing the article "Using group theoretic method to solve multi-dimensional diffusion equation" in a distinguished journal, (March 2010)
- [6] **Research award** from Alexandria University- Alexandria, Egypt, for publishing the article "Lie-Group Method for Unsteady Flows in a Semiinfinite Expanding or Contracting Pipe with Injection or Suction through a Porous Wall" in a distinguished journal, (March 2010)

- [7] **Research award** from Alexandria University- Alexandria, Egypt, for publishing the article "Lie-group method of solution for steady two-dimensional boundary-layer stagnation-point flow towards a heated stretching sheet placed in a porous medium" in a distinguished journal, (March 2010)
- [8] **Research award** from Alexandria University- Alexandria, Egypt, for publishing the article "Lie-Group Method Solution for Two-dimensional Viscous Flow between Slowly Expanding or Contracting Walls with Weak Permeability" in a distinguished journal, (March 2010)
- [9] **Conference grant** from the International Centre for Theoretical Physics (ICTP), Italy, for attending the "Egypt-France Mathematical Conference, Cairo-Egypt" (3-5 May 2010)
- [10] **Research award** from Arab Academy for Science, Technology and Maritime Transport- Alexandria, Egypt, for publishing the article "Modeling of Tsunami Generation and Propagation by a Spreading Curvilinear Seismic Faulting in Linearized Shallow-Water Wave Theory" in a distinguished journal, (January 2011)
- [11] **Research award** from Alexandria University- Alexandria, Egypt, for publishing the article "Modeling of Tsunami Generation and Propagation by a Spreading Curvilinear Seismic Faulting in Linearized Shallow-Water Wave Theory" in a distinguished journal, (May 2011)
- [12] **The best lecturer** (students voting) at the College of Engineering and Technology, Arab Academy for Science, Technology and Maritime Transport-Alexandria, Egypt, for the first semester of the academic year 2012/2013
- [13] **Conference grant** from Arab Academy for Science, Technology and Maritime Transport-Alexandria, Egypt "International Conference on Applied Analysis and Mathematical Modeling ICAAMM 2013, Istanbul, Turkey" (2-5 June 2013)
- [14] **Research award** from Arab Academy for Science, Technology and Maritime Transport- Alexandria, Egypt, for publishing the article "New solutions for solving the problem of particle trajectories in linear deep-water waves via Lie-group method" in a distinguished journal, (July 2013)
- [15] **Research award** from Arab Academy for Science, Technology and Maritime Transport- Alexandria, Egypt, for publishing the article "Lie group method for solving the problem of fission product behavior in nuclear fuel" in a distinguished journal, (July 2013)
- [16] **Research award** from Alexandria University Alexandria, Egypt, for publishing the article "New solutions for solving the problem of particle trajectories in linear deep-water waves via Lie-group method" in a distinguished journal, (October 2013)

- [17] **Research award** from Alexandria University Alexandria, Egypt, for publishing the article "Lie group method for solving the problem of fission product behavior in nuclear fuel" in a distinguished journal, (May 2014)
- [18] **Research award** from Arab Academy for Science, Technology and Maritime Transport- Alexandria, Egypt, for publishing the article "New solutions for solving Boussinesq equation via potential symmetries method" in a distinguished journal, (January 2015)
- [19] **Research award** from Arab Academy for Science, Technology and Maritime Transport- Alexandria, Egypt, for publishing the article "A study for MHD boundary layer flow of variable viscosity over a heated stretching sheet via Lie-group method" in a distinguished journal, (March 2015)
- [20] **Research award** from Alexandria University Alexandria, Egypt, for publishing the article "New solutions for solving Boussinesq equation via potential symmetries method" in a distinguished journal, (March 2015)

# **PROFESSIONAL ACTIVITES:**

#### (A) COMMITTEES MEMBERSHIP

- [1] Coordinator of Mathematics Group at the Arab Academy for Science, Technology and Maritime Transport -Alexandria, Egypt (2011-2014)
- [2] Member of the Undergraduate Committees at the Arab Academy for Science, Technology and Maritime Transport -Alexandria, Egypt, as a representative of the Basic and Applied Science Department for the academic years (2000-2014)
- [3] Academic advisor for the first year students, the Arab Academy for Science, Technology and Maritime Transport -Alexandria, Egypt, for the academic years (2000-2014)
- [4] Head of the Undergraduate Committees at the College of Engineering and Technology, the Arab Academy for Science, Technology and Maritime Transport -Alexandria, Egypt, (23 March 2014-31 March 2016)
- [5] Member of the ABET (Accreditation Board for Engineering and Technology) and NAQAA (National Authority for Quality Assurance and Accreditation of Education) Committees at the Arab Academy for Science, Technology and Maritime Transport -Alexandria, Egypt
- Shared in refereeing many scientific papers submitted for publication in [6] International Journals and proceedings of conferences International Journals: MECCANICA, Journal (a) of Aerospace Engineering, Chemical Engineering Communications, Analysis and Applications, Applied Mathematics, Nonlinear Analysis: Modelling and Control (Lithuania), International Journal of Mathematics and Mathematical Sciences (USA).
  - (b) National Conferences: ICCTA

### (B) ORGANIZATION MEMBERSHIP

- [1] Egyptian Society for Engineers, Egypt, (1994 Present)
- [2] Egyptian Mathematical Society (EMS), Egypt, (2002- Present)
- [3] International Educational Research Centre (IERC), India (2013-Present) *Member NO.: 130608*
- [4] International Association of Computer Science and Information Technology (IACSIT), Singapore (2014-Present)– Senior member *Member NO.: 80348108*

# **SCIENTIFIC ACTIVITIVES**

# (A)**PUBLICATIONS**

#### (A1) Papers published in international, refereed and reviewed journals

- [1] Abd-el-Malek, M.B., Badran, N.A., Hassan, H.S., USING GROUP THEORETIC METHOD FOR FISSION PRODUCT BEHAVIOR IN NUCLEAR FUEL, Int. J. Applied Mathematics, 7, no. 3, (2001) 333 -348
- [2] Abd-el-Malek, M.B., Badran, N.A., and Hassan, H.S., Solution of the Rayleigh problem for a power law non-Newtonian conducting fluid via group method, *Int. J. Eng. Sciences.*, 40, no. 14, (2002) 1599 1609
   Link: <u>http://www.sciencedirect.com/science/article/pii/S002072250200037X</u>
- [3] Abd-el-Malek, M.B., Badran, N.A., Hassan, H.S., Using group theoretic method to solve multi-dimensional diffusion equation, *J. Comput. Appl. Math.*, 147, no. 2, (2002) 385 395
   Link: http://www.sciencedirect.com/science/article/pii/S0377042702004740
- [4] Boutros, Y.Z., Abd-el-Malek, M.B., Badran, N.A., Hassan, H.S., Lie-group method for unsteady flows in a semi-infinite expanding or contracting pipe with injection or suction through a porous wall, *J. Comput. Appl. Math.*, 197, no. 2, (2006) 465 – 494 Link: <u>http://www.sciencedirect.com/science/article/pii/S0377042705006941</u>

[5] Boutros, Y.Z., Abd-el-Malek, M.B., Badran, N.A., Hassan, H.S., Lie-group method of solution for steady two-dimensional boundary-layer stagnation-point flow towards a heated stretching sheet placed in a porous medium, *MECCANICA*, 41, no. 6, (2006) 681 – 691

Link: http://link.springer.com/article/10.1007%2Fs11012-006-9014-x

[6] Boutros, Y.Z., Abd-el-Malek, M.B., Badran, N.A., Hassan, H.S., Lie-group method solution for two-dimensional viscous flow between slowly expanding or contracting walls with weak permeability, *Appl. Math. Modelling*, **31**, *no.* 6, (2007) 1092 – 1108 Link: http://www.sciencedirect.com/science/article/pii/S0307904X06000837

- [7] Abd-el-Malek, M.B., Badran, N.A., Hassan, H.S., Lie-Group Method for Predicting Water Content for Immiscible Flow of Two Fluids in a Porous Medium, *Appl. Math. Sciences*, 1, no. 24, (2007) 1169 - 1180 Link: <u>http://www.m-hikari.com/ams/ams-password-2007/ams-password21-</u> 24-2007/abd-el-malekAMS21-24-2007.pdf
- [8] Hassan, H.S., Ramadan, K.T., Hanna, S.N., Generation and Propagation of Tsunami by a Moving Realistic Curvilinear Slide Shape with Variable Velocities in Linearized Shallow-Water Wave Theory, J. Engineering, 2, no.7, (2010) 529-549

Link: <u>http://www.scirp.org/journal/PaperInformation.aspx?PaperID=2255</u>

- [9] Hassan, H.S., Ramadan, K.T., Hanna, S.N., Numerical Solution of the Rotating Shallow Water Flows with Topography Using the Fractional Steps Method, *Applied Mathematics*, 1, no.2, (2010) 104-117 Link: http://www.scirp.org/journal/PaperInformation.aspx?PaperID=2209
- [10] Abd-el-Malek, M.B., Hassan, H.S., Symmetry analysis for steady boundarylayer stagnation-point flow of Rivlin–Ericksen fluid of second grade subject to suction, *Nonlinear Analysis: Modelling and Control*, 15, no.4, (2010) 379 – 396 Link: <u>http://www.lana.lt/journal/39/Abd-el-Malek.pdf</u>
- [11] Ramadan, K.T., Hassan, H.S., Hanna, S.N., Modeling of tsunami generation and propagation by a spreading curvilinear seismic faulting in linearized shallowwater wave theory, J. *Appl. Math. Modelling*, 35, no.1, (2011) 61-79 Link: http://www.sciencedirect.com/science/article/pii/S0307904X10002131
- [12] Abd-el-Malek, M.B., Badran, N.A., Hassan, H.S., Abbas, H.H., New solutions for solving the problem of particle trajectories in linear deep-water waves via Liegroup method, *Appl. Math. Comput.*, **219**, *no.24*, (2013) 11365-11375 Link: <u>http://www.sciencedirect.com/science/article/pii/S0096300313006061</u>
- [13] Abd-el-Malek, M.B., Hassan, H.S., Lie group method for solving the problem of fission product behavior in nuclear fuel, *Math. Methods Appl. Sci.*, 37, no.3 (2014) 420-427
  Link: http://onlinelibrary.wiley.com/doi/10.1002/mma.2802/abstract

Link: http://onlinelibrary.wiley.com/doi/10.1002/mma.2802/abstract

[14] A. Boussaha, A. Laouar, A.Guerziz, Hassan, H.S., A new modified scheme for linear shallow-water equations with distant propagation of irregular wave trains tsunami dispersion type for inviscid and weakly viscous fluids, *GJPAM*, 10, no.6 (2014) 792-816

Link: <u>http://www.ripublication.com/Volume/gjpamv10n6\_.htm</u>

[15] Abd-el-Malek, M.B., Badran, N.A., Hassan, H.S., Abbas, H.H., New solutions for solving Boussinesq equation via potential symmetries method, *Appl. Math. Comput.* 251 (2015) 225-232
 Link: http://www.sciencedirect.com/science/article/pii/S0096300314015872

- [16] Hassan, H.S., Symmetry analysis for MHD viscous flow and heat transfer over a stretching sheet, *Applied Mathematics*, 6, no.1, (2015) 78-94
   Link: <u>http://www.scirp.org/Journal/PaperInformation.aspx?PaperID=53062</u>
- [17] Hassan, H.S., Mahrous, S.A., Sharara, A., Hassan, A., A study for MHD boundary layer flow of variable viscosity over a heated stretching sheet via Liegroup method, APPL MATH INFORM SCI, 9, no.3,(2015) 1327-1338 Link: <u>http://www.naturalspublishing.com/files/published/5spu574q67758u.pdf</u>
- [18] Abd-el-Malek, M.B., Badran, N.A., Hassan, H.S., Abbas, H.H., Lie group method for studying the heat generation effect on free-convection laminar boundary-layer flow over a vertical flat plate, J. Generalized Lie Theory Appl., 9 (2015) 2-9.
- [19] **Abd-el-Malek, M.B., Hassan, H.S.,** Solution of N-dimensional radially symmetric non-linear diffusion equation via symmetry analysis. (Submitted)
- [20] **Hassan, H.S.,** Symmetry analysis for studying the flow of a viscous fluid over a stretching sheet near the stagnation point in the presence of radiation effects. (Submitted)

#### (A2) Papers Published in Proceedings of International Conferences

- [1] Abd-el-Malek, M.B., Badran, N.A., and Hassan, H.S., Solution of the Rayleigh problem for a power law non-Newtonian conducting fluid via group method, *Proc.* 4<sup>th</sup> International Conference on Symmetry in Nonlinear Mathematical *Physics*. Kiev, Ukraine 43, no. 1, (2001) 49 – 56 Link: http://www.slac.stanford.edu/econf/C0107094/papers/Badran49-56.pdf
- [2] Abd-el-Malek, M.B., Badran, N.A., and Hassan, H.S., Using group theoretic method to solve multi-dimensional diffusion equation, *Proc. 4<sup>th</sup> International Conference on Symmetry in Nonlinear Mathematical Physics*. Kiev, Ukraine 43, no. 1, (2001) 57 – 64 Link: http://www.slac.stanford.edu/econf/C0107094/papers/Hassan57-64.pdf
- [3] Abd-el-Malek, M.B., and Hassan, H.S., Internal flow through a conducting thin duct via symmetry analysis, *Proc. of the International Conference on SPT 2007, Otranto, Italy* (2007) 233–234
- [4] Abd-el-Malek, M.B., and Hassan, H.S., Solution of Burgers' equation with timedependent kinematic viscosity via Lie-group analysis, Proc. 5<sup>th</sup> International Workshop "Group Analysis of Differential Equations & Integrable Systems", Protaras-Cyprus (2010) 6-14

#### (A3) Papers Presented in International Conferences

- [1] Abd-el-Malek, M.B., Badran, N.A., and Hassan, H.S., Solution of the Rayleigh problem for a power law non-Newtonian conducting fluid via group method. 4<sup>th</sup> International Conference on Symmetry in Nonlinear Mathematical Physics. Kiev, Ukraine, July 2001
- [2] Hassan, H.S., Mahrous, S.A., Sharara, A., and Hassan, A., A study for MHD boundary layer flow of variable viscosity over a heated stretching sheet via Liegroup method. *International Conference on Applied Analysis and Mathematical Modeling (ICAAMM 2013)*, *Istanbul, Turkey, June 2013*
- [3] Hassan, H.S., Symmetry analysis for studying the flow of a viscous fluid over a stretching sheet near the stagnation point in presence of radiation effects. *International Conference on Applied Analysis and Mathematical Modeling ICAAMM 2013, Istanbul, Turkey, June 2013*
- [4] Hassan, H.S., Symmetry analysis for MHD viscous flow and heat transfer over a stretching sheet. Third International Conference on Mathematics & Information Science (ICMIS 2013), *Luxor*, *Egypt*, Dec. 2013

## (B) CONFERENCES

- [1] Fourth International Conference on the Symmetry in nonlinear Mathematical Physics. Institute of Mathematics of National Academy of Sciences of Ukraine, Ukrainian Pedagogical University, *Kiev, Ukraine, July 2001*.
   <u>Paper presented:</u> Solution of the Rayleigh problem for a power law non-Newtonian conducting fluid via group method.
- [2] CIMPA-UNESCO-EGYPT School Recent Developments in the Theory of Elliptic PDE, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, February 2009.*
- [3] Egypt-France Mathematical Conference, *Cairo-Egypt*, May 2010.
- [4] International Conference on Applied Analysis and Mathematical Modeling (ICAAMM 2013), *Istanbul, Turkey, June 2013. Papers presented:*

**1.** A study for MHD boundary layer flow of variable viscosity over a heated stretching sheet via Lie-group method

**2.** Symmetry analysis for studying the flow of a viscous fluid over a stretching sheet near the stagnation point in presence of radiation effects

[5] Third International Conference on Mathematics & Information Science (ICMIS 2013), *Luxor, Egypt, Dec. 2013.* <u>Paper presented:</u>

Symmetry analysis for MHD viscous flow and heat transfer over a stretching sheet

[6] The 6<sup>th</sup> Symposium of the Fractional Calculus and Applications Group, Faculty of Science, Alexandria University, *Alexandria, Egypt, August 2014*.

## (C) WORKSHOPES

- [1] Technologies in Mathematics Teaching, organized by the Arab Network for Staff Development, Faculty of Engineering, Alexandria University, *Alexandria, Egypt, January 1999*
- [2] Role of Basic Science in Engineering Education, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, February 2010.*
- [3] The Ethics of Education and Scientific Research, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, March 2013*.
- [4] World Environment Day 2014, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, 5 June 2014.*
- [5] Technical Education & its Role in Satisfying Industry Demands" Forum, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, 10-11 September 2015.*
- [6] Industrial & Consultancy Committee "23rd Meeting" Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt,* 26 October 2015.
- [7] Pearson 2015- Annual E-Learning Conference- Partnering with INTEL and ITWORX Education, Nile Ritz –Carlton Hotel, *Cairo-Egypt, 12 December 2015*
- [8] Industrial & Consultancy Committee "24th Meeting" Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt,* 20 December 2016.
- [9] International Mathematics Day 2019, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, 14 March 2019*.
- [10] World Environment Day 2019, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, 10 June 2019*.
- [11] Pandemic and the Philosophy of Loneliness: An Existential Psychological Exploration, jointly organized by the Department of Philosophy and the IQAC, Narasinha Dutt College India, **Virtual Event**, **7** August 2020.
- [12] Resilience in higher education what lessons can we draw from COVID-19, organized by IIEP-UNESCO, Virtual Event, 26 November 2020.
- [13] The 2020 UAE International Forum on Higher Education and Research (IFHER), organized by Ministry of Education- United Arab Emirates, Virtual Event, 15-16 December 2020.

### (D) SEMINARS

[1] Symmetry analysis for solving problem of Rivlin-Ericksen fluid of second grade subject to suction, Faculty of Engineering, Alexandria University, *Alexandria, Egypt, July 2008.* 

### (E) Training Programs

- [1] Effective Presentation Skills, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, January 2014.*
- [2] Credit Hours System and Academic Advising, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, February 2014.*
- [3] Competing for Research Funds, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, February 2014.*
- [4] Research Ethics, Arab Academy for Science, Technology and Maritime Transport, *Alexandria, Egypt, June 2014*.

### (F) THESES SUPERVISED

- [1] Numerical Solution of Wave Equations via the Fractional Steps and Transformation Methods. Ph.D., Faculty of Engineering, Alexandria University, Egypt. 2010.
- [2] On Solution of some boundary value problems in Non-Newtonian Electrically Conducting Fluid. M.Sc., Faculty of Science, Zagazig University, Egypt. 2013.
- [3] Application of Lie-group Method to Magnetohydrodynamic (MHD) Viscoelastic fluid flow. M.Sc., College of Engineering and Technology, Arab Academy for Science, Technology and Maritime Transport, Alexandria, Egypt. 2013.
- [4] Application of the group and potential similarities methods to some boundary value problems. M.Sc., Faculty of Engineering, Alexandria University, under preparation.
- [5] Applications of Lie group method for solving nonlinear ordinary differential equations. M.Sc., Faculty of Engineering, Alexandria University, under preparation.
- [6] Applications of Lie group method for solving some boundary value problems. M.Sc., Faculty of Engineering, Alexandria University, under preparation.

## (G) THESES EXAMINED

- [1] On Some Problems in the Theory of Thermoelasticity without Energy Dissipation. M.Sc. thesis, Faculty of Science, Alexandria University, Alexandria, Egypt (2019).
- [2] Wall effect of viscous fluids flow through porous media. M.Sc. thesis, Faculty of Science, Alexandria University, Alexandria, Egypt (22 April 2019)

### (H) RECORD OF COURSES TAUGHT AT UNIVERSITY LEVEL

#### I. Alexandria University, Faculty of Eng., Alexandria, Egypt (1994-1997)

**Undergraduate level (1994-1997):** Calculus - Linear and Nonlinear Ordinary Differential Equations - Partial Differential Equations - Fourier Analysis - Complex Analysis - Vector Analysis - Numerical Analysis - Special Functions - Difference Equations- Z Transform – Probability and Statistics, Linear Algebra - Laplace Transforms.

#### II. Arab Academy for Science, Technology and Maritime Transport

#### **Undergraduate Level (1998-present)**

- Math 1 (BA121): Nautical
- Math 2 (BA122): Nautical
- Math 1 (BA123): Calculus and Analytic Geometry
- Math 2 (BA124): Calculus and Analytic Geometry
- **Calculus 3 (BA201):** Ordinary Differential Eqs, Laplace Transforms, Fourier series and Linear Programming
- Math 3 (BA223): Ordinary Differential Eqs, Laplace Transforms and Fourier series
- Math 4 (BA224): Vectors and Complex Analysis
- Math 5 (BA323): Advanced Engineering Mathematics
- Math 6 (BA326): Probability and statistics
- Course (BA221): Linear Algebra
- Management Mathematics for University of London' students (External Programme)
- Mathematics for business administration's students
- Statistics for business administration's students

#### Graduate Level (2009-present)

- ME753: Advanced Computational Methods
- Applied Statistics for MBA's students
- Applied Statistics in Management for DBA's Students
- Statistics for Management Decisions
- Quantitative Methods and Model-Building in Management
- GMAT (Quantitative Part)