C. V. of DR. MD. SHAFIQUL ISLAM

1. Name: **Dr. Md. Shafiqul Islam** (ড. মোঃ শফিকুল ইসলাম)

2. **Present Office Address:**

Professor, Department of Applied Mathematics,
University of Dhaka, Dhaka – 1000, Bangladesh.
Email: mdshafiqul@du.ac.bd
Phone: +88 017 11 86 47 25, Fax:+8802-9667222
https://du.ac.bd/faculty/faculty_details/APMAT/70

3. **Educational Qualifications:**

- Ph.D. in Mathematics (2002), Department of Mathematics, Bangalore University, India.
- M. Sc. (Thesis) in Mathematics (1989), Department of Mathematics, University of Dhaka, (Exam 1993)
- B. Sc. Honors in Mathematics (1988), Department of Mathematics, University of Dhaka, (Exam 1991)

4. **Teaching Experiences:**

- Professor, Department of Applied Mathematics and Department of Mathematics, University of Dhaka, Bangladesh, 18-02-2010 **onwards**
- Associate Professor, Department of Mathematics, University of Dhaka, 18 –06–2005 to 17-02-2010
- Assistant Professor, Department of Mathematics, University of Dhaka, 08 –10–2002 to 17–06–2005
- Assistant Professor & Lecturer, Department of Mathematics, Shahjalal University of Science and Technology (SUST), Sylhet, 19–03–1994 to 07–10–2002
- **Visiting Staff Fellow:** Department of Mathematics, University Nice Sophia-Antipolis, Nice, **France**
  01-09-2009 to 30-09-2009 and 21-01-2010 to 17- 02-2010

  Department of Mathematics, Middle East Technical University, Ankara, **Turkey**
  28-05-2017 to 04-06-2017

5. **Administrative and International Collaborative Experiences:**

(a) Chairman, Department of Applied Mathematics, Dhaka University, 02-07 -2017 to 01-07-2020.
During this period the **remarkable achievements** are:

- **Member of the HEQEP** project for Applied Mathematics – **Fund Tk. 1.70 Crore:** Has been utilized during the projected time for establishment Modern Class Rooms, Advanced Computer Labs, and departmental Seminar/Library, all equipped with AC, CCTV, WiFi, etc. and Departmental website: http://appliedmath.du.ac.bd.
- **First Organized** by the Department of Applied Mathematics and worked as **Organizing Secretary: 21st BMS International Mathematics Conference**, held 06 – 08 December 2019. Over 300 Mathematician participated including 25 Foreign Professionals from 13 countries.

(b) European Commission Project – Fund 18.00 Million Euros: Acted as **Local Coordinator** and Contact Person, member of the Board of Directors; 2009 – 2016. Erasmus Mundus Mobility with Asia (**EMMA**), Mobility from Asian Universities to European Universities**.** 24 Partner Universities and 12 associate partner Institutes from Asia and Europe. **Web**: https://math.unice.fr/EMMA/, http://emmasia.uevora.pt/emmasia

Achievements: Over 200 scholars (Teachers and Students) from Bangladesh, especially Dhaka University, BRACU and AUST have obtained their Graduate, Post Graduate, Ph. D. degrees; did Post-Doc from European Universities and some Professors Visited as Staff Fellow for1-2 months.

Under this Project University/ Country Visited: University Nice-Sophia Antipolis (**France**), University of Heidelberg (**Germany**), University of Genova (**Italy**), University of Warsaw (**Poland**), Prague (**Czech Republic**), University of Evora (**Portugal**), Lucian Blaga University of Sibiu (**Romania**), EU Commission (**Belgium**), Ateneo de Manila University (ADMU) and University of the Philippines-Diliman (**Philippines**); Kathmandu University (**Nepal**), AIT Bangkok (**Thailand**).

6. **Country/ University Visited for Conferences/ Workshops** (2 weeks): American Mathematical Society, San Francisco, California, **USA**; Martin Luther University (**Germany**); Institute of Mathematics, Hanoi (**Vietnam**); ADMU (**Philippines**), Vali-e-Asr University of Rafsanjan (**Iran**); Universiti Kebangsaan Malaysia and Open University Malaysia, Kuala Lumpur (**Malaysia**), National University of Singapore (**Singapore**); Middle East Technical University (**Turkey**).

7. Professional & Voluntary Affiliations

- **Member**, American Mathematical Society; (**USA**), since 2009
- **Member,** Society for Industrial and Applied Mathematics (**USA**), since 2009
- **Secretary**, Bangladesh Mathematical Society (BMS), Jan 2010 – Dec 2011
- Member of **Editorial Board**, Dhaka University Science Journal, July 2017 – June 2019
- **Associate Editor,** GANIT, Journal of Bangladesh Mathematical Society, Jan 2014 – Dec 2017
- **General Secretary**, Dhaka University Mathematics Alumni Association, Jan 2019 onwards,
- **Member,** Dhaka University Alumni Association.

8. Conferences/ Workshops/ Olympiad Organized and Attended in Home and Abroad:

(1). **Organizing Secretary:** 21st BMS International Mathematics Conference 2019, to be held 06 – 08 December 2019, **Achievement:** Over 300 Mathematician has participated including 25 Foreign professionals from 13 countries. http://www.bdmathsociety.org/?q=node/103

(2). **Secretary,** 9th National Undergraduate Mathematics Olympiad 2017, Final Round, Dhaka University

(3). **Joint Mathematics Meetings (JMM), Annual Conference, American Mathematical Society,** San Francisco, CA, January 13-16**, 2010, USA** (Paper Presentation)

(4). **Recent Advancements in the Theory and Practice of Credit Derivatives**, 28 – 30 September **2009**, Université de Nice Sophia Antipolis (UNS), **France**

(5). **NUMDIFF-12,** Conference on Numerical Methods for Differential Equations, 14 – 18 September **2009**, Martin Luther University, Halle-Wittenberg, **Germany** (Paper Presentation).

(6). CIMPA-IMAMIS-PHILIPPINES School on Numerical Methods for Partial Differential Equations, 27 August – 10 September **2007**, Ateneo de Manila University, **Philippines.**

(7). CIMPA-IMAMIS-VIETNAM School on Mathematical Finance, 23 April – 4 May **2007**, Institute of Mathematics, Hanoi, **Vietnam.**

(8). Fourth Seminar in Linear Algebra and its Applications & Wavelets Workshop, 07 – 09 March 2007, Vali-e-Asr University of Rafsanjan, **Iran** (Paper Presentation).

(9). CIMPA-IMAMIS-MALAYSIA **School on Financial Information Systems**, 22 May – 02 June **2006**, Universiti Kebangsaan Malaysia (UKM) and Open University Malaysia (OUM), Kuala Lumpur, **Malaysia**.

(10). **Fourth Asian Mathematical Conference**, 21– 23 July **2005**, National University of Singapore, **Singapore** (Paper Presentation)

(11). **Workshop** on Numerical Methods in Finance, and Wavelets & Applications, 18– 20 July **2005**, National University of Singapore, **Singapore**.

(12). Attended several national and international conferences held in Bangladesh**.**

9. Teaching Area:

Science& Engineering: Calculus, Linear Algebra, Ordinary and Partial Differential Equations, Real Analysis, Mathematical Methods, Complex Variables, Laplace Transform, Numerical Methods, Topology and Functional Analysis.

Business and Social Science: Business Mathematics, Linear Programming, Operations Research, Quantitative Business Analysis, Mathematics for Decision Making.

10. Research Interests: Finite Element Method, Numerical Integration, Numerical Solutions of Boundary Value Problems, Eigenvalue Problems and Integral Equations, Financial Mathematics.

11. Ph.D Supervision: Degree Awarded 02, Under supervision 01

(M. S.) Thesis Supervision: Completed 20; Under Supervision 02

Publications: 49 National and International Journals

1. M Tanzil Hasan, **Md. Shafiqul Islam**, Mir Shariful Islam (2020) – The Impulsive Motion of Flat Plate in Generalized Second Grade Fluid with Anomalous Diffusion, *American Journal of Applied Mathematics*, 8(6), 327 – 333
2. Sadia Akter Lima, Md. Kamrujjaman, **Md. Shafiqul Islam** (2020) – Direct Approach to Compute a Class of Reaction-Diffusion Equation by a Finite Element Method. *Journal of Applied Mathematics and Computation*, 4(2), 26-33
3. Umme Ruman and **Md. Shafiqul Islam** (2020) – Numerical Solutions of Linear Fractional Order BVP by Galerkin Residual Method with Differentiable Polynomials, *Applied and Computational Mathematics.* **9** (2), 20 – 25.
4. Hazrat Ali, Md. Kamrujjaman and **Md. Shafiqul Islam (2020)** – Numerical Computation of Fitzhugh-Nagumo Equation: A Novel Galerkin Finite Element Approach, *International Journal of Mathematical Research*, **9** (1), 20 – 27.
5. Md. Shorif Hossan, A B M Shahadat Hossain and **Md. Shafiqul Islam (2020**) – Numerical Solutions of Black-Scholes Model by Du Fort-Frankel FDM and Galerkin WRM, *International Journal of Mathematical Research*, **9** (1), 1 – 10.
6. Muntasir Alam and **Md. Shafiqul Islam** (**2019**) – Numerical Solutions of Time Dependent Partial Differential Equations Using Weighted Residual Method with Piecewise Polynomials. The *Dhaka University Journal of Science,* **67** (1), 5– 12.
7. Nazrul Islam and **Md. Shafiqul Islam** (**2018**) – Bezier Polynomials with Application, *The Dhaka University Journal of Science,* **66** (2), 157– 162.
8. Mahua Jahan Rupa and **Md. Shafiqul Islam** (**2017**) – Numerical solutions of system of second order boundary value problems using Galerkin method, *GANIT* Jn. of Bangladesh Math. Society, **37**, 161 – 174.
9. Hazrat Ali and **Md Shafiqul Islam** (**2017**) – Generalized Galerkin Finite Element Formulation for the Numerical Solutions of Second Order Nonlinear Boundary Value Problems, *GANIT* Jn. of Bangladesh Math. Society, **37** (2017) 147-159.
10. H.T. Rathod, **Md.Shafiqul Islam**, H.Y. Shrivalli, Bharath Rathod, K. Sugantha Devi ***(2017)–*** Finite element solution of Poisson Equation over Polygonal Domains using a novel auto mesh generation technique and an explicit integration scheme for nine node linear convex quadrilateral of Lagrange family, *International Journal of Engineering and Computer Science (IJECS)*, **6** (11), 22869 – 23058.
11. **Md. Shafiqul Islam**,Humaira Farzana, Samir Kumar Bhowmik (**2017**) – Numerical solutions of sixth order eigenvalue problems using Galerkin weighted residual method, *Differential Equations and Dynamical Systems* (Springer) 25 (2) 187 - 205, (doi:10.1007/s12591-016-0323-9).
12. Humaira Farzana, **Md. Shafiqul Islam (2015)** – Computation of some second order Sturm-Liouville BVP using Chebyshev Legendre Collocation method, *GANIT*Journal of Bangladesh Mathematical Society, **35**, 97– 114.
13. Humaira Farzana, **Md. Shafiqul Islam**, Samir Kumar Bhowmik (**2015**) – Computation of Eigenvalues of the Fourth Order Sturm-Liouville BVP by Galerkin Weighted Residual Method, *British Journal of Mathematics and Computer Science*, **9** (1), 73 – 85.

14. Md. Shafiqul Islam and Md. Bellal Hossain (2015) – Numerical Solutions of Eighth Order BVP by the Galerkin Residual Technique with Bernstein and Legendre Polynomials, Applied Mathematics and Computation (Elsevier), 261, 48 – 59.

15. Humaira Farzana and **Md Shafiqul Islam** (**2015**) – Application of Galerkin Weighted Residual Method to 2nd, 3rd and 4th order Sturm-Liouville Problems, *Mathematical Theory and Modeling*, **5** (2) 195 – 206.

16. **Md. Shafiqul Islam** and Md. Bellal Hossain (**2015**) – Numerical approaches for tenth and twelfth order linear and nonlinear differential equations, *British Journal of Mathematics and Computer Science*, **5** (5) 637 – 653.

17. Md. Bellal Hossain, **Md. Shafiqul Islam**, Md. Azizur Rahman (2014) – Numerical Solutions of Eleventh Order Boundary Value Problems Using Piecewise Polynomials, *IOSR Journal of Mathematics*, **10** (3), 58-68.

18. Md. Bellal Hossain and **Md. Shafiqul Islam** (**2014**) – A Novel Numerical Approach for Odd Higher Order Boundary Value Problems, *Mathematical Theory and Modeling*, **4** (5) 1 – 11.

19. Md. Bellal Hossain and **Md. Shafiqul Islam**(**2014**) – Numerical Solutions of General Fourth Order Two point Boundary Value Problems by Galerkin Method with Legendre Polynomials, *The Dhaka University Journal of Science*, **62** (2) 103 – 108.

20. Md. Bellal Hossain and **Md. Shafiqul Islam** (**2014**) – Numerical Solutions of Sixth Order Linear and Nonlinear Boundary Value Problems Polynomials, *Journal of Advances in* Mathematics, **7** (2) 1180 – 1190.

21. M. Alamgir Hossain and **Md. Shafiqul Islam** (**2014**) – Generalized Composite Numerical Integration Rule Over a Polygon Using Gaussian Quadrature, *The Dhaka University Journal of Science*, **62 (1)**, 25 – 29.

22. **Md. Shafiqul Islam** and Md. Bellal Hossain **(2013**) – On the Use of Piecewise Standard Polynomials in the Numerical Solutions of Fourth Order Boundary Value Problems, *GANIT* Jn. of Bangladesh Math. Society, **33**, 53 – 64.

23. **Md. Shafiqul Islam** and Md. Azizur Rahman (**2013**) – Solutions of Linear and Nonlinear Volterra Integral Equations Using Hermite and Chebyshev Polynomials, *International Journal of Computers & Technology*, **11** (8) 2910 – 2920.

24. Jishan Ahmed, Paulo Correia and **Md. Shafiqul Islam** (**2013**) – Numerical Solutions of Euler Equations by Runge-Kutta Discontinuous Galerkin Method, *Inter J Math Computer Appl Research,* **3** (1), 83 – 94.

25. M. A. Rahman and **Md. Shafiqul Islam** (**2012**) – Numerical Solutions of Volterra Integral Equations Using Legendre Polynomials, GANIT Jn. of Bangladesh Math. Society, **32**, 29 – 35.

26. M. A. Rahman and **Md. Shafiqul Islam** and M. M. Alam (**2012**) – Numerical Solutions of Volterra Integral Equations Using Laguerre Polynomials, *Journal of Scientific Research*, **4** (2), 357- 364.

27. **Md. Shafiqul Islam** and Afroza Shirin (**2011**) – Numerical solutions of a class of second order boundary value problems on using Bernoulli Polynomials, *Applied Mathematics*, **2** (9), 1059 – 1067.

28. **Md. Shafiqul Islam**, Goutam Saha and Nurunnahar Akter (**2011**) – Gauss-Legendre Numerical Integrations over a Quadrilateral Element in Closed Form, *Bangladesh Journal of Scientific and Industrial Research*, **46(3)**, 399-405.

29. **Md. Shafiqul Islam**, Mostak Ahmed and M. Alamgir Hossain (**2010**) – *Numerical Solutions of IVP Using Finite Element Method with Taylor Series* , GANIT Jn. of Bangladesh Math. Society, **30**, 51 – 58.

30. **Md. Shafiqul Islam** and M. Alamgir Hossain (**2010**) – Application of composite numerical integrations over a standard square finite element, *Jahangirnagar University Journal of Science*, **33** (1), 75 – 86.

31. **Md. Shafiqul Islam** and Afroza Shirin (**2010**) – Numerical solutions of Fredholm integral equations of second kind using piecewise Bernoulli polynomials**,** *The Dhaka University Journal of Science*, **58**(2), 264-272.

32. M. A. Hossain and **Md. Shafiqul Islam** (**2010**) – Applications of composite numerical integrations using Gauss-Radau and Gauss-Lobatto quadrature rules, *Journal of Scientific Research*,**2**(3), 465-477.

33. Afroza Shirin and **Md. Shafiqul Islam** (**2010**) – Numerical solutions of Fredholm integral equations using Bernstein polynomials, *Journal of Scientific Research*,**2** (2), 264-272

34. Thowhida Akther, **Md. Shafiqul Islam**, Sanwar Uddin Ahmad (**2010**) – Eigenvalue Analysis of 2D Helmholtz equation on Quadrilateral Elements, *The Dhaka University Journal of Science*, **58**(1), 141 – 142.

35. H.T. Rathod,R.D. Sathish, **Md. Shafiqul Islam**, Arun Kumar Gali (**2009**)– Application of MATLAB symbolic maths with variable precision arithmetic (vpa) to compute some high order Gauss Legendre Quadrature rules, *GANIT* (Jn. of Bangladesh Math. Society), **29**, 117 - 125.

36. **Md. Shafiqul Islam** and M. Alamgir Hossain (2009) – Numerical Integrations over an Arbitrary Quadrilateral Region, Applied Mathematics and Computation (Elsevier), 210 (2), 515 – 524.

37. **Md. Shafiqul Islam** and M. Alamgir Hossain (2008)– Numerical Integrations over an Arbitrary Triangular Region, International e-Journal of Numerical Analysis and Related Topics (IeJNART), Vol 2, 24 – 40.

38. **Md. Shafiqul Islam**, Nurunnahar Akter (**2008**) – Closed form numerical integration formulae for a four-node convex quadrilateral finite element, *The Dhaka University Journal of Science*, **56** (2) 165 - 169.

39. **Md. Shafiqul Islam**, Goutam Saha (**2008**)– Applications of Gauss-Radau and Gauss-Lobatto numerical integrations over a four node quadrilateral finite element, *Bangladesh Journal of Scientific and Industrial Research*, **43**(3), 377-386.

40. H. T. Rathod, B. Venkatesudu, K.V. Nagraja, **Md. Shafiqul Islam** (2007) – Gauss Legendre – Gauss Jacobi quadrature rules over a tetrahedral region, Applied Mathematics and Computation (Elsevier), 190 (1), 186 – 194.

41. **Md. Shafiqul Islam,** Goutam Shaha (**2007**) – Analytical stiffness Matrix in plane elasticity related to linear quadrilateral elements, GANIT (Jn. of Bangladesh Math. Society), **27**, 37 – 53**.**

42. **Md. Shafiqul Islam**, H. T. Rathod (**2006**) – Alternative approach of numerical integration for rational functions related to linear convex quadrilateral finite elements, *Journal of Applied Sciences Research* (**Insinet**), **2**(9), 533 – 540.

43. **Md. Shafiqul Islam** (**2004**) – Explicit hermite basis functions for linear quadrilateral elements, *GANIT* (Jn. of Bangladesh Math. Society), **22**, 73 – 82.

44. **Md. Shafiqul Islam**, Md. Jahrul Alam (**2003**) – Accuracy of the quadratic quadrilateral finite elements of straight sides, *GANIT* (Jn. of Bangladesh Math. Society), **20**, 21–35.

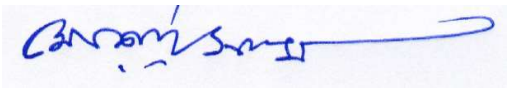
45. H. T. Rathod, **Md. Shafiqul Islam** (**2002**) – Reduction of rational integrals related to linear and convex quadrilateral finite elements, *Numerical Methods for Partial Differential Equations* (**Wiley**), **18**, 759 - 770.

46. H. T. Rathod, **Md. Shafiqul Islam** (**2001**)– Some pre-computed universal arrays for linear convex quadrilateral finite elements, *Finite Elements in Analysis and Design*(**Elsevier**), **38**, 113 – 136.

47. H. T. Rathod, **Md. Shafiqul Islam** (**2000**) – Some analytical integration formulas for trapezoidal shape quadrilateral elements of Lagrange family, *Communications in Numerical Methods in Engineering* (**Wiley**), **16**, 423–438.

48. H. T. Rathod, **Md. Shafiqul Islam** (**1998**) – Integration of rational functions of bivariate numerators with linear denominators over (-1,1) square in a local parametric two dimensional space, *Computer Methods in Applied Mechanics and Engineering* (**Elsevier**), **161**, 195–213.

49. **Md. Shafiqul Islam** (**1996) –** Spectrum of the ceasaro operator on the space of bounded sequences , SUST Studies (Jn. of Shahjalal University of Science & Technology, Bangladesh), 1 (1), 48 – 54.



(Md. Shafiqul Islam)