

## CURRICULUM VITAE



### Personal Details

**Name:** Prof. Dr. rer. nat. Fredrick Oluoch Nyamwala,

**Address:** Moi University, Mathematics Department,  
P.O. Box 3900-30100  
Eldoret, Kenya.  
Tel.No.: +254 768 709 383.  
E-mail: [foluoch2000@yahoo.com](mailto:foluoch2000@yahoo.com) OR [foluoch2000@mu.ac.ke](mailto:foluoch2000@mu.ac.ke)

**Nationality:** Kenyan.

**Date of Birth:** 27th February 1979.

**Gender:** Male

**Marital Status:** Married

### Areas of Research

- Spectral theory of unbounded operators
- Elementary operators
- Numerical ranges
- Inner derivations
- Structural properties of bounded operators
- Mathematical Modelling
- Applications of Mathematics in Nanoparticle Science.

### Work Experience:

#### (a) Management

- September 2014 to Date: - Chair of Department, Department of Mathematics & Physics, Moi University, Box 3900 Eldoret, Kenya. Responsibilities: Coordinating teaching of departmental courses, administering and processing examinations, developing new and reviewing old curricula among, preparing departmental annual budgets.

- June 2017 to Date: Monitoring and Evaluation Officer as well as MSc & PhD coordinator for the ACEII-PTRE World Bank Project.
- 1st November 2014-30th November 2014: - Acting Dean School of Biological and Physical Sciences, Moi University, Box 3900 Eldoret Kenya. Responsibilities: Coordinating the smooth running of various programmes, representing dean in various senate meetings and deans' committee meetings, chairing of postgraduate theses defences.
- Symposium Coordinator for school of Biological and Physical sciences, Moi University 10th Annual International Conference 23-27 September 2014, The School emerged the best.
- November 2013-August 2014: Graduate Studies, Research and Extension Committee representative for school of Biological and Physical Sciences.
- May 2011 to September 2013: - Co-ordinator faculty of science/School of Mathematics, Applied Statistics & Actuarial Science programmes, Kisumu city campus college, Maseno University. Responsibilities: Coordinating the teaching of courses in the programmes offered by the particular schools and faculty in the college.
- On various occasions between July 2010 to September 2013 I have acted as Principal at Kisumu City Campus College. Responsibilities: Representing the Principal in various meetings, ensure smooth day-to-day running of the college.
- September 2011-September 2013: E-learning facilitator for mathematics courses: Differential Calculus, Introduction to Analysis, Real Analysis, Complex Analysis and Measure Theory, at E-Campus, Maseno University.

#### **(b) Academic**

- September 2023 to Date: - Associate Professor of Pure Mathematics, Department of Mathematics, Physics and Computing, Moi University, Box 3900, Eldoret Kenya. Responsibilities: Teaching both undergraduate and post graduate courses, supervising undergraduate and post graduate research work. Developing new curricula, conducting research and offering seminars at the school level.
- October 2013-August 2023: - Senior Lecturer, Department of Mathematics, Moi University, Box 3900, Eldoret Kenya. Responsibilities: Teaching both undergraduate and post graduate courses, supervising undergraduate and post graduate research work. Developing new curricula, conducting research and offering seminars at the school level.
- July 2010 to September 2013: - Lecturer, Department of Mathematics, Applied Statistics & Actuarial Science, Maseno University, Private Bag, Maseno, Kenya. Teaching both undergraduate and post graduate courses as well as supervising undergraduate and post graduate courses, offering seminars at the department, conducting research.

- February 2006 to June 2010: - Tutorial Fellow, Department of Mathematics, Applied Statistics & Actuarial Science, Maseno University, Private Bag, Maseno, Kenya. Responsibilities: Assisting in teaching by offering tutorials to undergraduate students as well as grading undergraduate examinations. Winter & Summer semesters 2009-2010: Teaching Assistant, Fachbereich Mathematik/Informatik, Universitaet Osnabrueck, 49069, Osnabrueck, Germany. Responsibilities: Assisting undergraduate students to solve mathematical problems in addition to offering tutorials.
- March 2003 - January 2006: - Graduate Assistant, Department of Mathematics, Applied Statistics & Actuarial Science, Maseno University, Private Bag, Maseno, Kenya. Responsibilities: Assisting in invigilation of examinations and grading undergraduate examinations.
- September 2002 - March 2003: Graduate Teacher, Siaya Township Secondary School, P. O. Box, 873, Siaya, Kenya. Responsibilities: Teaching Mathematics and Physics.

**Education:**

- September to November 2021: Research Exchange Visit to Leibniz University Hannover (LUH) sponsored by DAAD.
- September 2019: Research Exchange Visit at King's College London.
- March 2012-Sept 2012: Post-Doctoral student at University of Osnabrueck, Germany.
- Oct 2007 - June 2010: PhD student, Fachbereich Mathematik/Informatik, Universitaet Osnabrueck, Germany. Thesis title, Spectral Theory of Differential and Difference Operators in Hilbert Spaces. Obtained a final grade of, Very Good.
- May 2003 - August 2005: Graduate studies, Master of Science (MSC), Pure Mathematics, Maseno University, Private Bag, Maseno, Kenya. Thesis title, On Norms of Inner Derivations and of Symmetrised Two-Sided Multiplication Operators. Obtained: Distinction in course work.
- 1998 - 2002: Undergraduate studies, Bachelor of education science (Mathematics and Physics), Maseno University. Graduated with First Class Honours.
- 1993 - 1996: High School Education, Hono Secondary School, P.O. Box 364, Siaya, Kenya. Obtained B+ (plus) of 83 points on a scale of 96 points in Kenya Certificate of Secondary Education (KCSE).
- 1985 - 1992: Primary Education, Gombe Primary School, P.O. Box, 387, Siaya, Kenya. Obtained 70 points on a scale of 84 points in Kenya Certificate of Primary Education (KCPE).
- 1984: Pre-Primary Education, Gombe Primary School, P.O. Box, 387, Siaya, Kenya.

**Personal Skills and Competences:**

- Dholuo (Native Speaker)

**Other languages:**

- English (Excellent)
- Swahili (Excellent)

- German (Average)

**Social Skills and Competences:** Sociable, out-going, flexible, patient, self-driven, result oriented, focussed, understanding and hardworking.

**Community Work:**

- Director of Non-Governmental Organisation, Peak Africa Research Institute (PARI), charged with formulation of peace initiatives in Africa, ensuring that quality educational standards are maintained, poverty alleviation through mitigation of forest depletion and soil conservation.
- March 2015: Gave a career talk at Mbale High School, Vihiga County, Kenya.
- North Rift KDSA-Wings to Fly Coordinator: Responsibilities include: identifying wings to fly former beneficiaries in the universities located in the North-Rift region of Kenya for Equity groups foundations scholarships as well as organising for them career guidance and counselling.
- A member of Hono Secondary Alumni Association.
- A member of Gombe Primary School Old Boys Association.

**Member of University Committee**

- June 2022 to Date: Member of Staff Disciplinary Committee
- January 2023: Member of Postgraduate Studies Review Committee
- 2022: Member of Housing and Space Allocation Committee
- 2015: Member of Graduation Ceremony Harmonization Committee

**Computer Skills:** Typing and type setting in **LATEX**.

**Attraction of Funds to the University**

- January 2024: Won SDG-DAAD Partnership for Building Capacity in Modelling (together with MMUST, UNILAG, KNUST & TUM (Germany)) for 2023-2027 worth 400,000 EUR.
- August 2022: Won DAAD In-Country/In-Region Scholarships project for PhD in Biostatistics for 15 Doctoral students hosted by Moi University worth KES 41 Million.
- June 2022: Wrote a proposal that attracted Euro 86, 000 from Volkswagen Foundation to organize summer school on Applications of Biostatistics and Biomathematics in Epidemiological dynamics in Africa.
- May 2022: Wrote a proposal that attracted Euro 6,000 from CDC-IMU for training Mathematics Doctoral supervisors on, Enhancing Quality and Internationalization of Mathematics Doctoral Supervision in Kenya.
- August 2021: Attracted Euro 5,500 from DAAD for research visit to LUH, Germany
- July 2021: Wrote a proposal that attracted Euro 25, 000 from DIES for training Chair of Departments in Kenyan Universities on, Enhancing Strategic Leadership and Management of Institutions of Higher Learning Post Covid-19.
- March 2021: Wrote a proposal that attracted Euro 2,950 from DAAD for a virtual training workshop on, Conducting Research during a Pandemic: The Case of Covid-19.

- 2019: Wrote a successful grant proposal that attracted US Dollars 12, 500 from The World Academy of Science (TWAS) for research on Spectral Theory of Composite of Differential Operators.
- 2019: Wrote a proposal that attracted US Dollars 5,000 from International Mathematical Union for Research Exchange Visit to King's College London.
- 2019: Together with colleagues, wrote a proposal that attracted US Dollars 250, 000 for establishment of Incubation Centre.
- 2019: Wrote a proposal that won Euro 15, 000 for 2019 KDSA International Workshop on, The Role of Universities and Research Institutions on The Kenya's Big Four Agenda, (Moi University Kenya 12<sup>th</sup>-14<sup>th</sup> June 2019)
- 2019: Wrote a proposal that won Euro 8, 000 for DAAD Workshop on New Tools on Scientific Data Collection and Analytics
- 2018: Wrote a proposal that won 15 DAAD In-Country/In-Region PhD in Pure Mathematics Scholarships from 2019-2021. Total amount of grant KES 36 Million.
- 2018: Wrote a proposal that attracted Euro 6,000 from DAAD for workshop training on Academic Proposal Writing.
- 2016: Together with other colleagues, we wrote a proposal that has been funded by world bank: ACE II- PTRE project (I am the postgraduate programmes coordinator). The project is worth US\$ 6 million.
- 2016: Together with other KDSA members, wrote proposals that attracted funds for former wings to fly students at Moi University. Each student was awarded a grant of KES 30,000.
- September 2016: Proposal to Mentoring African Researchers in Mathematics-London Mathematical Society (MARM-LMS) that was funded to £10,000.
- AMMSI project that funded to postgraduate students: Beryl Musundi and Joyce Ngala amounting 2,000 Euros.
- NACOSTI funds to postgraduate students: Flora Runji Ksh. 300,000, Joyce Ngala Ksh. 120, 000, Beryl Musundi Ksh. 120,000.

### **Scholarship and Fellowship Awards**

- August 2021: Won Euro 5,500 for Research visit to Leibniz University Hannover (LUH).
- July 2019 Won IMU-Simons African Fellowship Grant (USD 5,000) to visit King's College London
- November 2016-February 2017: Awarded African Sub-Sahara Staff Exchange Fellowship to visit Mbarara University of Science and Technology (MUST), Uganda.
- July 2011: Awarded TWAS-DFG scholarship for a post-doctoral research visit to universitaet Osnabrueck, Germany.
- October 2007 - July 2010: Awarded Deutscher Akademischer Austausch Dienst (DAAD) PhD scholarship.
- September 2003 - August 2005: Awarded Deutscher Akademischer Austausch Dienst DAAD) in-country scholarship for Master of Science.
- May 2003-August 2005: Awarded Maseno University postgraduate scholarship
- July 1996: Certificate of merit; best overall in Mathematics of Siaya District Secondary School Mock Association.

### **Peer Reviewer of Academic Journals**

- January 2014 to Date: Reviewer Journal of Linear Algebra and Applications (LAA).
- April 2013 to Date: Reviewer Journal of Difference Equations and Applications (JDEA).
- February 2011- Date: Mathematics editor, Maseno University Journal.

### **Membership of Professional Societies**

- May 2004 to Date: Member of International Linear Algebra Society, ILAS.
- June 2005 to date: Member of Research Group of Mathematical Inequalities and Applications, RGMIA.
- 2005-date: Member of Kenya DAAD Scholars Association (KDSA)
- March 2015- Date: Chair of KDSA, Moi University chapter.
- June 2017- June 2019: KDSA National Deputy Secretary General.
- June 2019 – To Date: KDSA National Vice Chair.

### **Workshop and Conferences Organised**

- 12<sup>th</sup> – 25<sup>th</sup> March 2023, Organized Summer School on Applications of Biomathematics and Biostatistics in Epidemiological Dynamics in Africa sponsored by Volkswagen Foundation, Eldoret, Kenya.
- 14<sup>th</sup> – 17<sup>th</sup> November 2022, Organized the second phase of NMT-Kenya Training Workshop in Kibabii University, Bungoma Kenya. Theme of Training: Enhancing Strategic Leadership and Management of Institutions of Higher Learning Post Covid-19.
- 2<sup>nd</sup> – 4<sup>th</sup> November 2022: Organized CDC-IMU training workshop for Mathematics Doctoral supervisors on, Enhancing Quality and Internationalization of Mathematics Doctoral Supervision in Kenya. The workshop took place in Moi University, Eldoret, Kenya.
- 15<sup>th</sup> to 17<sup>th</sup> March 2022: Organized the first phase of NMT-Kenya Training Workshop in Moi University, Eldoret Kenya. Theme of Training: Enhancing Strategic Leadership and Management of Institutions of Higher Learning Post Covid-19
- 5<sup>th</sup> – 7<sup>th</sup> May 2021: Organized a Training Workshop on, Conducting Research during a Pandemic: The Case of Covid-19, (sponsored by DAAD).
- 12<sup>th</sup>-14<sup>th</sup> August 2020: Chaired the Scientific Committee for the international conference co-hosted by ACEII – PTRE Center and Sino-Africa Symposium on Textiles and Apparel (SAISTA), Donghua University, Virtual International Conference on Phytochemistry, Textile and Renewable Energy Technologies for Sustainable Development. The Theme of the Conference was, “Advancing Science, Technology and Innovation for Industrial Growth.” The conference was sponsored by World Bank.
- 12<sup>th</sup>-14<sup>th</sup> June 2019: 2019 KDSA International Conference and AGM, *The Role of Universities and Research Institutions in Realisation of The Kenya’s Big Four Agenda*, (sponsored by DAAD).
- 9<sup>th</sup>-10<sup>th</sup> May 2019: Training Workshop on New Tools on Scientific Data Collection, Analytics and Report Writing, (Sponsored by DAAD).

- 18<sup>th</sup>-19<sup>th</sup> April 2018: Organised a workshop on Scientific Proposal Writing at Moi University sponsored by DAAD.
- 11<sup>th</sup>- 15<sup>th</sup> June 2018: Organised a short course training on Programme Development and Curriculum Delivery at Moi University, Sponsored by ACEII-PTRE World Bank Project.
- November 2017: Organised workshop on Leadership and Management at Moi University, sponsored by ACEII-PTRE World Bank Project.
- September 2014: A member of Organising Committee for Moi University Biennial International Conference (sponsored by Moi University and National Bank of Kenya).

### **Conferences Attended and Presentations**

- **Nyamwala, F. O.**, Lessons Learnt, Strengths and Challenges in DIE-NMT Projects Implementation, DIES-NMT Projects Closing Workshop, University of Potsdam, Berlin, Germany, 23<sup>rd</sup> to 28<sup>th</sup> July 2023.
- **Nyamwala, F. O.**, Monitoring and Evaluation of ACEII Projects; Lessons Learnt, ACEII M& E, and Social and Environmental Safeguards Workshop, Entebbe, Uganda, 10<sup>th</sup> – 16<sup>th</sup> July 2023.
- **Nyamwala, F. O.**, Enhancing Doctoral Supervision and Internationalization of Mathematics Doctoral Students, CREST Networking Workshop, Stellenbosch University, South Africa, 22<sup>nd</sup> – 26<sup>th</sup> November 2022.
- **Nyamwala, F. O.**, Spectral Theory of Composite of Higher Order Commutative Difference Operators with Unbounded Coefficients, Weekly Seminar Presentations at Leibniz University of Hannover, LUH, Germany, 14<sup>th</sup> September 2021.
- **Nyamwala, F. O.**, Spectral Theory of Composite of Higher Order Differential Operators, Weekly Seminar Presentation at University of Oxford, United Kingdom, 26<sup>th</sup> September 2019.
- **Nyamwala, F. O.**, Spectral Theory of Higher Order Differential Operators with Unbounded Coefficients, Weekly Seminar Presentation at King's College London, 19<sup>th</sup> September 2019.
- **Nyamwala, F. O.**, The Role of Mathematics in Biophysics and Economic Development, International Conference in Exploring Biophysics Diversity for Sustainable Industrial and Economic Development, MMUST, 3<sup>rd</sup>-4<sup>th</sup> July 2019, Kakamega, Kenya.
- **Nyamwala, F. O.**, International Deans' Course Training – Africa 2019, Berlin and Osnabrueck, Germany, 15th – 30th June 2019.
- **Nyamwala, F. O.**, Vereinsarbeit in der Praxis Best Practices and Lessons Learnt, Die dritten Alumni-Treffen fuer Alumni-Vereine, Bonn, Germany, 7<sup>th</sup> – 10<sup>th</sup> March 2019.
- **Nyamwala, F. O.**, Writing a Successful Grant Proposal, Masinde Muliro University of Science & Technology, Postgraduate and Researchers Training Workshop, Kakamega, Kenya, 28<sup>th</sup> February, 2019.
- **Nyamwala, F. O.**, Plagiarism and its Effects in Academics, Presentation made in Maseno University Weekly Seminar, 14<sup>th</sup> September 2018.
- **Nyamwala, F. O.**, Presented a paper on Quality Monitoring and Evaluation Plan during ESAMI training Workshop in Nairobi, 29<sup>th</sup> July-10<sup>th</sup> August 2018.

- **Nyamwala, F. O.**, Quality Proposal Writing, Presentation made during DAAD training workshop, Dar-es-Salaam 13<sup>th</sup>-14<sup>th</sup> May 2018.
- **Nyamwala, F. O.**, Modelling Optical Properties of Nanomaterials, Seminar Presentation, University of South Africa (UNISA), 7<sup>th</sup> March 2018.
- **Nyamwala, F. O.**, Mathematics Education in Kenya, Seminar Presentation, The Open University, United Kingdom, 13<sup>th</sup> February 2018
- **Nyamwala, F. O.**, The spectral Theory of Unbounded Operators, Seminar Presentation, University of South Wales, 6<sup>th</sup> February, 2018.
- **Nyamwala F. O.**, Perturbation Theory of Differential Operators, 4<sup>th</sup> Strathmore International Mathematics Conference, Nairobi, Kenya, 19<sup>th</sup>-23<sup>rd</sup> June 2017.
- **Nyamwala F. O.**, The Place of Mathematics in Electoral System, KDSA Conference, Kisumu, Kenya, 15<sup>th</sup>-16<sup>th</sup> June 2017.
- **Nyamwala F. O.**, Perturbation Theory of Unbounded Operators and their Applications. Colloquium presented on 22<sup>nd</sup> February 2017 at Mbarara University of Science and Technology, Uganda.
- **Nyamwala F. O.**, Spectral Theory of Unbounded Difference Operators and their Applications in Information Technology, Colloquium presented on 22<sup>nd</sup> November, 2016, at Mbarara University of Science and Technology, Uganda.
- **Nyamwala, F. O.**, “Spectral Theory of Difference Equations and their Applications in Information Technology”, Alexander von Humboldt Conference, Naivasha Kenya. 6th- 8th April 2016.
- **Nyamwala, F. O.**, “The Continuous Spectrum of Difference Equations with Unbounded coefficients”, Strathmore International Conference, 17th-21st August 2015.
- **Nyamwala, F. O.** “Influence of Coefficients on the Location of Absolutely Continuous Spectrum of a Fourth Order Difference Operator”, Strathmore International Mathematical Research Meeting, 12th-16th August 2013.
- **Nyamwala, F. O.** “Similarities and Differences in Spectral Theory of Differential and Difference Operators in Hilbert Spaces”, Strathmore International Mathematical Research Meeting, 23rd-27th July 2012.
- **Ambogo D. O. and Nyamwala, F. O.** “The Remainder Term of Asymptotic Integration of Differential Operators with Unbounded Coefficients”, Strathmore International Conference, 11th-16th August 2011.
- **Nyamwala, F. O.** “Spectral Theory of Fourth Order Differential Operators with Unbounded Coefficients”, Strathmore International Conference, 11th-16th August 2011.
- **Nyamwala, F. O.** “Spectral Theory of Fourth Order Difference Operators in Hilbert Spaces”. First Kenyatta University International Mathematics Conference, The role of mathematics as a tool for development, 8th-10th June 2011, Kenyatta University, Kenya.
- **Nyamwala F. O.** “Spectral Theory of Higher Order Differential Operators with Unbounded Coefficients” Presented in The Afrikantag, Universitaet Koeln, Germany, (21st-22nd November 2008)
- **Nyamwala F. O.** “On the Properties of Finite Product of Sigma-Finite Measure Spaces”, AMMSI Conference, University of Nairobi, 25th-27th November, 2006.

- **Nyamwala F.O.** “Norms and Spectrum of Elementary Operators” a paper presented in the 13th ILAS conference in Amsterdam, Netherlands (17th-22nd July 2006).

**Refereed Publications:**

- 1) **Nyamwala F. O.**, and Okello B. O. Application of Comparison Algebras in Construction of Commutative Composites of Symmetric Higher Order Differential Operators, Complex Analysis and Operator Theory 17 (1), (2023). DOI:10.1007/s11785-022-01313-9.
- 2) Bezire W. and **Nyamwala F.O.**, Construction of 3-GDDs with Block size 4 and 2 using 1 and 2 Factorizations of Complete Graphs, Annals of Mathematics and Computer Science, 17 (2023), 26-39.
- 3) Bezire W. Owino I. & **Nyamwala F. O.**, An Application of 3-Designs to Construct 3-GDDs of Block Size 4 and 2 Groups, Annals of Mathematics and Computer Science, 11 (2023) Pages 1-10, ISSN:2789-7206.
- 4) K. K. Korir, E. M. Benecha, **F. O. Nyamwala** & E. B. Lombardi., Tuning Electronic Structure of ZnO nanowires via 3d transition metal dopants for Improved Photo-Electrochemical Water Splitting: An ab initio Study, Materials Today Communication, 26 (2021) 101929.
- 5) **F.O. Nyamwala**, D. O. Ambogo and J. M. Ngala, Comparative Analysis of Spectral Theory of Second Order Difference and Differential Operators with Unbounded Odd Order Coefficient, Kyungpook Math. J. 60 (2020), 297-305.
- 6) Otieno J. A., Ambogo D. O. and **Nyamwala F. O.**, Notions for Continuity for Finite Rank Maps in the Space of Normal Operators, Advances in Mathematics: Scientific Journal, 9, (2020), 8593-8604.
- 7) Odero B. A., Agure J. O., and **Nyamwala F. O.**, On the Norm of a Generalized Derivation, Pure Mathematical Sciences, 8 (1), (2019), 11-16.
- 8) Odero B. A., Agure J. O., and **Nyamwala F. O.**, On Numerical Range of Multiplication Operator, International Journal of Mathematical Analysis, 13 (6), (2019), 283-292.
- 9) Chepkemoi E., Mutiso J. M. and **Nyamwala F. O.**, A Measure for Evaluating the Degree of Slope Rotatability in Three Level Second Order Slope Rotatable Designs, Journal of Advances in Mathematics and Computer Science, 30 (1), (2019), 1-12.
- 10) **Nyamwala F. O.**, Essential and Continuous Spectrum of Symmetric Difference Equations, Math. Nachr. 290, (2017), 2977-2991.
- 11) Achola, D. O., Oleche, P. O., Opiyo, R. O and **Nyamwala F. O.**, A Secure Cryptography Election Model, International Journal of Multidisciplinary Sciences and Engineering, 8 (4), (2017), 1-9.
- 12) Runji F. M., Agure J. O., and **Nyamwala F. O.**, On the Maximal Numerical Range of Elementary Operators, International Journal of Pure and Applied Mathematics, 112 (4), (2017).
- 13) Achola D. O., Oleche P. O., and **Nyamwala F. O.**, Provable, Secure and Democratic Election Model, International Journal of Multidisciplinary Sciences and Engineering, 8 (5), (2017), 5-12.
- 14) Runji F. M., Agure J. O. and **Nyamwala F. O.**, On the Numerical Range of a Generalized Derivation, International Mathematical Forum, 12 (6), (2017), 277-283.

15) Owino J. N., Agure J. O. and **Nyamwala F. O.**, Relationship between Completely Positive Maps and Completely Bounded Maps, *Int. J. Acad. Stud.* 2 (1), (2016), 61-66.

16) Musundi B. O., Owuor G. L. and **Nyamwala F. O.**, Mathematical Analysis of a Cholera Transmission Model Incorporating Media Coverage, *International Journal of Pure and Applied Mathematics*, **111** (2), (2016), 219-231.

17) Koech W. C., Rotich S., and **Nyamwala F. O.**, Dynamic Model of a DC Motor-Gear-Alternator (MGA) System, *Asian Journal of Mathematics*, 1 (4), (2016), 1-6.

18) Koech W., Rotich T., **Nyamwala F. O.** and Rotich S., Parameter Estimation of a DC Motor-Gear-Alternator (MGA) System via Step Response Methodology, *American Journal of Applied Mathematics*, 4 (5), (2016), 252-257.

19) **Nyamwala, F. O.**, Absolutely Continuous Spectrum of Fourth Order Difference Equations, *Math. Nachr.*, **288**, no. 8-9 (2015), 1009-1027.

20) Owino J. N., Agure J. O. and **Nyamwala F. O.**, On Completely Bounded Maps, *Int. J. Acad. Stud.* 1 (1), (2015), 1-6.

21) Kingangi D. N., Agure J. O. and **Nyamwala F. O.**, On the Norm of Elementary Operators, *Advances in Pure Mathematics*, **4** (2014), 309-316.

22) H. Behncke and **Nyamwala, F. O.**, Spectral Theory of Higher Order Difference Operators, *Journal of Difference Equations and Applications*, **19**, no.12, (2013), 1983-2028.

23) **Nyamwala, F. O.**, Ambogo D. O., and Agure J. O., Deficiency Indices and Spectrum of Fourth Order Difference Equations with Unbounded Coefficients, *Math. Nach.*, **286**, no.4, (2013), 323-339.

24) H. Behncke and **Nyamwala, F. O.**, Spectral Theory of Differential Operators with Unbounded Coefficients II, *Math. Nach.* **285**, no. 2-3, (2012), 181-201.

25) H. Behncke and **Nyamwala, F. O.**, Spectral Theory of Differential Operators with Unbounded Coefficients, *Math. Nach.* **285**, no. 1, (2012), 56-73.

26) H. Behncke and **Nyamwala, F. O.**, Spectral Theory of Difference Operators with Almost Constant Coefficients II, *Journal of Difference Equations and Applications*, **17**, no.5, (2011), 821-829.

27) H. Behncke and **Nyamwala, F. O.**, Spectral Theory of Difference Operators with Almost Constant Coefficients, *Journal of Difference Equations and Applications* **17**, no.5, (2011), 677-695.

28) **Nyamwala, F. O.**, Spectral Analysis of Four Term Differential Operator, *Kyungpook Math. J.*, **50**, (2010), 15-35.

29) Behncke H., and **Nyamwala F. O.**, Two Projections and One Idempotent, *International Journal of Pure and Applied Mathematics*, 52 (4), (2009), 501-510.

30) **Nyamwala F. O.**, Norms of Symmetrised Two-Sided Multiplication Operators, *International Journal of Mathematical Analysis*, 3 (35), (2009), 1735-1744.

31) **Nyamwala F. O.** and Agure J. O., Norms of Elementary Operators in Banach Algebras, *International Journal of Mathematical Analysis*, 2 (9), (2008), 411-424.

32) **Nyamwala, F. O.**, Norms and Spectrum of Elementary Operators in  $B(H)$ , *African Journal of Science and Technology (AJST)*, **8**, no.2, (2007), 8-17

- Charles Nzila, **Nyamwala Oluoch**, Ambrose Kiprop, Rose Ramkat and Isaac Kosgey: *Advances in Phytochemistry, Textile and Renewable Energy Research For Industrial Growth*, Conference Proceedings, ACEII-PTRE, Moi University, (2020).

### **Supervision of Post Graduate Students**

#### **a) Doctorate Students**

- **Denis Kingangi**: Norms of Elementary Operators, PhD student at Maseno University (Graduated, 2015)
- **Wesley Koech**: Modelling and Simulation of the Motor-Gear-Alternator Model to Amplify the Usability of the Solar Energy for Commercial and Domestic Use, PhD student at Moi University, (Graduated 2018)
- **Dennis Nkurunzinza**: A Mathematical Model for Determining Agricultural Chemical Contaminants with Reactions, PhD student at Moi University, (Graduated 2018)
- **Daniel Ochieng Achola**: Voter Cryptography Modelling, Maseno University, (Graduated, 2018)
- **Flora Runji**: Numerical Ranges of Elementary Operators, Moi University, (Graduated 2018).
- **Beatrice Odero**: Norms of Elementary Operators, Maseno University, (Graduated, 2019).
- **Arphaxard Kimeu**: The Minimal Cover of Symmetric Groups (Moi University, 2023 Submitted)
- **Bezire Wilbroad**: Group Divisible Designs with Block size Four, Five and Two Groups, (Moi University, Has written intent to Submit).
- **Benard Owino**: Stability Analysis of Krein von-Neumann Self-Adjoint Operator Extensions and Dirac Operators (Moi University, Ongoing)
- **Boaz Okello**: Spectral Theory of Composite of Differential and Difference Operators on Hilbert Spaces (Moi University, Ongoing)
- **Milkah Wangechi Mwangi**: Perturbation Theory of Deficiency Indices and Spectrum of Unbounded Operators, Moi University, (On going).
- **Leonard Mariera Siro**: Spectral Theory of Composite of Unbounded Operators, Moi University, (On going).

#### **b) Masters Students**

- **Beryl Musundi**: Modelling Cholera Transmission Incorporating Media Coverage, Moi University, (Graduated, 2017).
- **Rogers Achando**: Deficiency Indices and Spectrum of Fourth Order Differential Operators with Unbounded Coefficients, Maseno University, (Graduated, 2016)
- **Evans Mogoi**: Spectral Theory of Difference Operators with unbounded Coefficients on Hilbert Spaces, Maseno University, (Graduated, 2015)
- **Julia Owino**: Completely Positive Maps, Maseno University, (Graduated, 2015).

- **Cyprian Sakwa:** On the Algebra Numerical Range, Maseno University, (*Graduated, 2015*)
- **Joyce Ngala:** Comparative Analysis of Spectral Theory of Higher Order Difference and Differential Operators, Moi University, (*Submitted, 2019*).
- **Robert Kemboi:** Mean Value Theorem and Inequalities in Measure Spaces, Moi University, (*Completed, 2019*).

### **Theses Marking**

I have marked and graded several PhD and Masters theses.

### **Hobbies:**

Reading, Football, Music, Traveling, Watching movies.

### **Referees:**

(1) Prof. John Ogonji Agure,  
Maseno University, Private Bag, Maseno, Kenya.  
Tel.No.:+254 723 271 122, [johnagure@yahoo.com](mailto:johnagure@yahoo.com).

(2) Prof. Balazs Szendroi  
Oskar-Morgenstern-Platz 1  
A-1090 Wien  
[balazs.szendroi@univie.ac.at](mailto:balazs.szendroi@univie.ac.at)

(3) Prof. Ann Mwangi  
Moi University, P.O. Box 3900-30100, Eldoret, Kenya.  
Tel.No.:+254 726 594 568, [annwsum@gmail.com](mailto:annwsum@gmail.com)