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Prof. Philip Ngare

Biography

Prof. Philip Ngare is a Professor(Associate) of Actuarial Science and Financial Mathematics at University of Nairobi, Kenya. He received Ph.D in Financial Mathematics from University of Linz, Austria. His research interests include Finance, Actuarial Science, Probability and Stochastic Modelling. His prior research has been published in several refereed journals, including journal of Applied Mathematical Finance, Journal of Mathematical Finance and Journal of Economics and Finance. Other than research, he has taught several undergraduate, masters and Ph.D courses. His major departmental responsibilities includes; Administration, teaching and examining both undergraduate and postgraduate academic units, supervising projects or theses for both undergraduate and postgraduate students, revising and developing new curriculum, mentoring of talented students, performing research and sourcing for research funds. He is an expert in financial modelling and statistical data analysis using SPSS, R and MATLAB.

Education & Training

2007–2010 **Ph.D., Financial Mathematics**, *University of Linz, Linz, Austria*.
Grade: Pass with Distinction

2003–2005 **M.Sc., Pure Mathematics**, *University of Nairobi, Kenya*.

Working Experience

Feb, 2019-Now **Professor(Associate)**, *Actuarial Science and Financial Mathematics*, University of Nairobi, Kenya.

2014–2018 **Senior Lecturer**, *Actuarial Science and Financial Mathematics*, University of Nairobi, Kenya.

2011–2014 **Lecturer**, *Actuarial Science and Financial Mathematics*, University of Nairobi, Kenya.

2010–2011 **Senior Research Associate**, *Institute of Mathematical Sciences*, Strathmore University, Kenya.

2007–2010 **Scientific Researcher**, *Financial Mathematics*, Austrian Academy of Science, RICAM, Austria.

Professional bodies Membership

2016–Now **Registered member of The Actuarial Society of Kenya (TASK)-No. 100333**, Kenya.

2014–Now **Registered member of African collaboration for Quantitative Finance and risk research**, Republic of South Africa.

Thesis Supervisions

Doctoral Theses Supervisions

1. Dr. Samuel Gyamerah(2019). Modelling and valuation of temperature-based weather derivatives for agricultural sector. Ph.D in Mathematics (Finance Option), *PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Kenya*.
2. Dr. Charity Wamwea(2019). Valuation of quanto caplets in a multi-curve cross-currency LIBOR market model. Ph.D in Mathematics (Finance Option), *PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Kenya*.
3. Dr. Jean Marie Vianney HAKIZIMANA(2019). Investment timing and decision making under political ambiguity and economic uncertainty. Ph.D in Mathematics (Finance Option), *PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Kenya*.
4. Dr. Nelson Dzupire (2019). Modeling and Pricing Rainfall and Temperature Derivatives to Hedge Maize Yield Risks. Ph.D in Mathematics (Finance option),*PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Kenya*.
5. Dr. Stanley Sewe(2019). Stochastic Filtering and Riak Estimation with social network data. Ph.D in Mathematics (Finance Option), *PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Kenya*.
6. Dr. Jane A. Aduda (2017). Application of Multivariate volatility models in estimating optimal dynamic hedge ratios for crack spreads with volatility spillovers in energy markets. Ph.D in Financial Mathematics, *University of Nairobi, Kenya*.
7. Dr Adeline Mtunya (2017). Stochastic Models and Control for Optimizing Dividend and Investment Policies for Firms in Developing Economies. Ph.D in Computation Mathematics (Financial Mathematics option), *Nelson Mandela, African Institution of Science and Technology, Tanzania*.
8. Cynthia A Ikamari, Ph.D Candidate in Actuarial Science, *University of Nairobi*.
9. Erastus K Ndekele, Ph.D Candidate in Actuarial Science, *University of Nairobi*.

Masters Theses Supervisions

29. Mamadou Waly Dia Manga(2019). Sensitivities of Asian options under Heston stochastic volatility model. *MSc Financial Mathematics, PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Completed*.
28. Steeven Belvinos Affognon(2019). Stochastic optimal control for elliptic system with Dirichlet problem. *MSc Financial Mathematics, PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Completed*.
27. Edouard Singirankabo(2019). Pricing look-back option via general mean on multinomial lattice. *MSc Financial Mathematics, PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Completed*.
26. Niller Nyaribo Nyamari. MSc Actuarial Science candidate, *University of Nairobi, 2019*.
25. Oloo Collins Singei (2019).Optimal Pricing of Medical Insurance for Formal Employees using Empirical Bayes Credibility Model. *M.Sc. Actuarial Science project at University of Nairobi, Completed*.

24. Kamande, John Munene(2018). Pricing currency options using parabolic PDEs, *M.Sc. Actuarial Science project at University of Nairobi, Completed*.
23. Ibrahim Adesokan(2018). Markov chain asset pricing model for an emerging market, *M.Sc. Financial Mathematics thesis at PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Completed*.
22. Terere Dereje Wirtu(2018). Pricing lookback option under stochastic volatility, *M.Sc. Financial Mathematics thesis at PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Completed*.
21. Dennis Odhiambo(2018). Trinomial tree model for asset pricing, *M.Sc. Financial Mathematics thesis at PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Completed*.
20. Geoffrey G.O. Abulo (2017). Determinant of loan repayment in micro-financial institution in Kenya, *M.Sc.Actuarial Science project at University of Nairobi, Completed*.
19. Jone Kyalo Oyoo (2016). The approximation of the Nairobi stock exchange share indices as a proxy for the growth optimal portfolio investment strategy, *M.Sc.Actuarial Science project at University of Nairobi, Completed*.
18. Kurui Godfrey Kipkoech (2016). A multivariate markov chain model for credit risk measurement and management, *M.Sc.Actuarial Science project at University of Nairobi, Completed*.
17. Jusper Wendo Ojok (2016). Comparative pricing of Vanilla instruments using short rate models, *M.Sc.Actuarial Science project at University of Nairobi, Completed*.
16. Okeyo Johnson Otieno (2016). Modelling inflation rate volatility in Kenya using ARCH-TYPE model family, *M.Sc.Actuarial Science project at University of Nairobi, Completed*.
15. Odhiambo Joab Onyango (2016). The effect of investment in leveraged exchange-traded funds to the ultimate probability of ruin, *M.Sc.Actuarial Science project at University of Nairobi, Completed*.
14. Langat Kenneth Kiprotich (2016). Pricing options using Trinomial tree model, *M.Sc.Actuarial Science project at University of Nairobi, Completed*.
13. Topista Nabirye (2016). Wishart Stochastic Volatility Models with applications to Emerging Financial Market Data, *M.Sc. Financial Mathematics thesis at PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Completed*.
12. Ronald Katende (2016). On the location of a free boundary for American Options, *M.Sc. Financial Mathematics thesis at PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Completed*.
11. Betiglu Mezgebu (2016). A Reduced Form of the Three Factor Commodity Valuation Model, *M.Sc. Financial Mathematics thesis at PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Completed*.
10. Korir Beatrice Chebet (2015). Development of an unemployment insurance product, *M.Sc.Actuarial Science project at University of Nairobi, Completed*.
9. Patrick Maina (2015). The uptake of medical insurance under limited credibility among non salaried individuals in Kenya, *M.Sc.Actuarial Science project at University of Nairobi, Completed*.
8. John Musau (2015). Capital pricing models: Theory and applications to Insurance and Nairobi security exchange, *M.Sc.Actuarial Science project at University of Nairobi, Completed*.

7. Catherine Kemunto (2014). Alternatives to conventional Pension Scheme, *M.Sc.Actuarial Science project at Universiy of Nairobi, Completed*.
6. Philip A. Okwemba (2014). Modelling and Pricing rainfall derivatives for hedging weather risks, *M.Sc.Mathematical finance thesis at PAUSTI, Jomo Kenyatta University of Agriculture and Technology, Completed*.
5. Kennedy O. Manyala (2013). Normal mixtures in finance: A comparative study and applications, *M.Sc.Actuarial Science project at University of Nairobi*, completed.
4. Lucy Muthoni (2013). Multi-yield curve modelling with application to Kenyan Bond Market, *M.Sc.Actuarial Science project at University of Nairobi*, completed.
3. Jonesmus M Wambua (2012). A statistical approach in modelling maize prices volatility, *M.Sc.Actuarial Science project at University of Nairobi*, completed.
2. Peter N. Wainaina (2012), Modelling Job Satisfaction among call center agents: Ordinal regression model, *M.Sc.Actuarial Science project at University of Nairobi*, completed.
1. Christopher W. Njoroge (2011). Actuarial valuation of temperature derivatives, *M.Sc.Actuarial Science project at University of Nairobi*, completed.

Research and Publications

52. S. Gyamerah, P. Ngare & Dennis Ikpe (2020). Probabilistic forecasting of crop yields via quantile random forest and Epanechnikov Kernel function, *Elsevier: Agricultural and Forest Meteorology. Vol 280*.
51. E. Singirankabo, P. Ngare & C.Ogutu (2020). Pricing Lookback Option Using Multinomial Lattice, *Communications in Mathematical Finance. Vol. 9(1), pp 1–12*.
50. S. Gyamerah, P. Ngare & Dennis Ikpe (2019). Hedging crop yields against weather uncertainties–a weather derivative perspective, *MDPI-Mathematical and Computational Applications. Vol 24 (3)*.
49. E. Singirankabo, P. Ngare & C.Ogutu (2019). Moment-Matching technique and General Mean in pricing Lookback Option, *Communications in Mathematical Finance. Vol. 8, pp 123–145*.
48. S. A. Gyamerah, P. Ngare & D. Ikpe (2019). Stock market movement prediction via stacking ensemble learning method, *IEEE Conference on Computational Intelligence for Financial Engineering & Economics (CIFEr), IEEE, 1–8*.
47. S. Gyamerah, P. Ngare & Dennis Ikpe (2019). Mitigating geographical basis risk of weather derivatives using spatial-temporal regime-switching temperature model, *AIMS Mathematics, Vol 4, pp 1274–1290*.
46. S. Sewe, P. Ngare & P. Weke (2019). Credit Scoring with Ego-Network Data, *Journal of Finance Mathematics. Vol. 9, no. 3*.
45. C. Ikamari, P. Ngare & P.Weke (2019). Discretizing the Information Based Asset Price Dynamics, *Journal of Finance and Economics. Vol. 7, no. 2, 68–74*.
44. C. Ikamari, P. Ngare & P.Weke (2019). Estimation of parameters in the Information Based Asset Pricing Framework, *Mathematical Theory and modeling. Vol. 9, no. 5*.
43. C. Ikamari, P. Ngare & P.Weke (2019). Volatility Extraction in Information Based Asset Pricing Framework Via Non-Linear Filtering, *International Journal of Sciences: Basic and Applied Research. Vol. 47, no. 1*.

42. J.M.V. Hakizimana, P. Ngare & J. Akinyi (2019). Impacts of a regime switching (elections) in investment, *Communications in Mathematical Finance. Vol. 8, no. 1, 37–50*.

41. J.M.V. Hakizimana, P. Ngare & J. Akinyi (2019). Real options model in green energy investment, *Communications in Mathematical Finance. Vol. 8, no. 1, 21–35*.

40. M. W. D. Manga, P. Ngare & M.A. Konte (2019). Asian options Greeeks with Heston stochastic model parameters, *Communications in Mathematical Finance. Vol 8(1), 147–167*.

39. N.C. Dzupire, P. Ngare & P. Odongo (2019). Pricing Basket Weather Derivatives on Rainfall and Temperature Processes, *Int. J. Financial Stud. Vol. 7, no. 35*.

38. S. Affognon, P. Ngare & G. Degla (2019). Optimal Control Governed by Stochastic Elliptic Equations with Regular States, *Applied Mathematical Sciences, Vol. 13, no. 15, 733 - 741*.

37. S.Sewe, P. Ngare & P.Weke (2019). Dynamic Credit quality evaluation with social network data, *Journal of Applied Mathematics, Vol. 1, page 18–29*.

36. C. Wamwea, P. Ngare, M. Bidima & S. Mwelu (2019). Valuation of Quanto Caps and Floors in a Calibrated Multi-Curve Cross-Currency LIBOR Market Model, *Journal of Mathematical Finance, Vol. 9(4)*.

35. C. Wamwea, P. Ngare & M. Bidima (2019). A Multicurve cross-currency LIBOR market model, *Hindawi: Journal of Applied Mathematics, Vol. 1, page 1–17*.

34. S. Gyamerah, P. Ngare & Dennis Ikpe (2018). Regime-Switching Temperature Dynamics Model for Weather Derivatives, *International Journal of Stochastic Analysis Vol. 1, page 1–15*.

33. O.L. Babasola, P. Ngare & E.A. Owoloko (2018). Crank Nicolson Approach for the Valuation of the Barrier Options, *International Journal of Applied Mathematical Sciences, Vol 11, page 7–21*.

32. I. Irakoze, Dennis C. Ikpe & P. Ngare (2018). Robust Optimal Portfolio and Bank Capital Adequacy Management, *International Journal of Applied Mathematical Sciences, Vol 11, page 23–39*.

31. A. Mtonye, P. Ngare & Y Nkansah-Gyekye (2018). Optimal Investment Strategy with Debt Financing under Stochastic Interest rates, *Mathematical Finance Letters, Vol 3, page 37–56*.

30. J. Aduda, P. Weke & P.Ngare (2018). A Co-integration analysis of the interdependencies between crude oil and distillate fuel prices, *Journal of Mathematical Finance,Vol. 8, page 478–496*.

29. N. Dzupire, P. Ngare & L Odongo (2018). Levy process based ornstein-Uhlenbeck temperature model with time varying speed of mean reversion, *Journal of Advances and Applications in Statistics, Pushpa Publishing House, Allahabad, India , Vol 53,page 199–224*.

28. N. Dzupire, P. Ngare & L Odongo (2018). A Poisson Gamma Rainfall Model, *Journal of Probability and Statistics, Hindawi, Vol 1,page 51–63*.

27. J. Hok, P. Ngare & A. Papapantoleon (2018). Expansion formulas for European quanto options in a local volatility FX-LIBOR model, *International Journal of Theoretical and Applied Finance, World Scientific Publishing Company, Vol. 21, No. 2*.

26. S. Gyamerah & P. Ngare (2018). Regime-Switching model on hourly electricity spot price dynamics, *Journal of Mathematical Finance Vol. 8, page 102–110*.

25. D.Ogot, P.Ngare& J. Mung'atu (2018). An Adjusted Trinomial Lattice for pricing average based Asian Option, *American Journal of Applied Mathematics, Vol 6 (2): Page 28–33*.
24. I. Adesokan, P. Ngare & A. Kilishi (2017). Analyzing expected returns of stock using the markov chain model and the capital asset pricing model, *Applied Mathematical Sciences*, Vol 11(56), Page 2777-2788.
23. O.Correia , P. Ngare, D. Sindiga & D. Otwoma (2017). Determinants of Mobile money remittance in East Africa, *IOSR Journal of Economics and Finance*, Vol. 8(3), page 17–29.
22. W.Makena , P. Ngare, K. Mulindwa & M Wairia (2017). Effect of Liberalized Financial policy on commercial banks performance in Kenya, *International journal of emerging trends in economics and management sciences*, Vol. 8(1), page 17–27.
21. F. Amsi, P. Ngare, P. Imo & M. Gachie (2017). Effect of microfinance credit on SMEs financial performance in Kenya, *International journal of emerging trends in economics and management sciences*, Vol. 8(1), page 48–61.
20. L. Manwari, P. Ngare & R. Kipsang (2017). Access to finance for women entrepreneurs in Kenya: Challenges and opportunities, *International journal of emerging trends in economics and management sciences*, Vol. 8(1), page 37–47.
19. A. Mtonye, P. Ngare & Y Nkansah-Gyekye (2017). Steady Dividend payment and Investment financing strategy: A functional mean reversion speed approach *Journal of Mathematical and computational science, Vol. 7(4), page 667–698*.
18. A. Mtonye, P. Ngare & Y Nkansah-Gyekye (2017). Optimal investment strategy under stochastic interest rates, *Journal of Mathematical Finance, Vol. 7, page 319–332*.
17. J. Okeyo, P. Ngare & J. Mwaniki (2016). Modelling inflation rate volatility in Kenya using ARCH-TYPE model family, *Research Journal of Finance and Accounting, Vol 7(23), page 10–17*.
16. T. Nabirye, P. Ngare & J. Mungatu (2016). Foreign Exchange derivative pricing with Stochastic Correlation, *Journal of Mathematical Finance, Vol. 6, page 887–899*.
15. B. Dibessa, P. Ngare & G. Orwa (2016). A reduced form of the three factor valuation model, *Global journal of pure and aplied Mathematics*, Vol 12, No. 5, page 4167–4181.
14. R. Katende , D. SECK , P. Ngare (2016). On the Location of a free boundary for American Options, *Journal of Mathematical Finance*, Vol 6(5),Page 930-943.
13. A. Mtonye, P. Ngare & Y Nkansah-Gyekye (2016). On Steady Dividend Payment under Functional Mean Reversion Speed, *Journal of Mathematical Finance*, Vol 6, page 368–377.
12. G. Leobacher & P. Ngare (2016). Utility indifference pricing of derivatives written on industrial loss indices, *Computational and Applied Mathematics, Elsevier*, Vol 300, page 68–82.
11. L. Komo, E. Kyando & P. Ngare (2016). Determinants of customers' adoption of mobile parking payment services in Kenya, *International journal of academic research in economics and management Sciences*, Vol. 7(1): page 1-12.
10. J. Aduda, P. Weke, P.Ngare & J Mwaniki (2016). Financial time series modelling of trends and patterns on the energy markets, *Journal of Mathematical Finance*, Vol. 6, page 324-337.

9. E. Wanyonyi, M Wandia & P Ngare (2016). Analyzing the Consumers' Switching Behavior for Digital Set Top Boxes in Kenya, *DBA Africa Management review*, Vol 6(3), page 42–57.
8. Okemwa, PA and Weke, PGO and Ngare, PO and Kihoro, JM (2015). Modelling and Pricing Rainfall Derivatives to Hedge on Weather Risk in Kenya, *International Journal of Science and Research (IJSR)*, Vol. 4(3), page 339–344.
7. J. Ngalawa & P. Ngare (2014). Interest rate risk management for commercial banks in Kenya, *Journal of Economics and Finance*, Vol. 4(1), page 11–21.
6. T. Githui & P. Ngare (2014). Financial literacy and retirement planning in the informal sector in Kenya, *Journal of Education and research*, page 1–16.
5. B. Muturi & P. Ngare (2014). Salary determinants in higher institutions of learning in Kenya, *International journal of academic research in economics and management Sciences*, Vol. 3(2), page 83–91.
4. M. Kweyu & P. Ngare (2014). Factor analysis of customers perception of mobile banking services in Kenya, *International journal of emerging trends in economics and management sciences*, Vol. 5(1), page 1–8.
3. P. Ngare (2012). Indifference pricing of contingent claims on NIG Levy model, *Journal of Applied Mathematical Sciences*, page 2315–2326.
2. G. Leobacher & P. Ngare (2011). On modelling and pricing rainfall derivatives with seasonality, *Journal of Applied Mathematical Finance*, page 71–91.
1. P.Ngare (2010). Indifference pricing and hedging for insurance and weather derivatives, *Ph.D. Thesis, University of Linz, Austria*.

Current Research and Upcoming Publications

1. Philip Ngare. Analysis of the coexistence of conventional and unconventional credit markets in the agribusiness sector in Kenya, *Kenya Bankers Association, working paper series, 2019*.

Contributed talks at Workshops and Conferences

Nov.,2019 Marie Sklodowska-Curie Actions: Fostering EU-Africa cooperation in researchers' training and mobility, Addis Ababa, Ethiopia.

Aug.,2019 Pricing Crop Yield derivatives using multivariate stochastic volatility models, Fourth Network Meeting for Sida- and ISP-funded PhD Students and Postdocs in Mathematics, August 5-9, 2019 Bishoftu, Ethiopia.

Oct.,2018 Analysis of the coexistence of conventional and unconventional credit markets in the agribusiness sector in Kenya University of Nairobi, Research Week, Kenya.

Aug.,2018 Credit market dynamics in an evolving regulatory and market participants' environment 7th annual Kenya bankers Association banking research conference.

April.,2018 Harnessing scientific research,innovation and technology for sustainable development Machakos Universisty, Kenya.

Feb.,2017 Incomplete Market methods applied to weather and agricultural risks, AIMS Tanzania centre, Bagamoyo, Tanzania.

Oct.,2016 Expansion formulas for European quanto options in a local volatility FX-LIBOR model, EAUMP conference, University of Makerere, Kampala, Uganda.

July.,2016 Modelling risk of financing agribusiness in developing countries, Field institute, University of Toronto, Canada.

Dec.,2015 Modelling risk of financing agribusiness in Kenya, University of Nairobi.

Oct.,2014 Berlin–Padova young researchers Meeting in Probability, WIAS, TU Berlin and UniPostdam, Berlin-Germany.

Sep.,2014 Modelling the Risk in Financing Agribusiness in Kenya, Kenya Bankers Conference, Kenya.

Aug.,2014 Valuation of financial products for weather risk management, International Congress of Mathematicians, Seoul , Korea.

March.,2014 Monte Carlo methods in Finance, Pan African University institute of basic science, technology and innovation-JKUAT.

Feb.,2014 Numerical methods in Finance, 7th Summer school in Mathematical finance, African institute for Mathematical Sciences, South Africa .

Feb.,2014 Current numerical methods and stochastic volatility modelling in Quantitative finance, Rand Merchant Bank, South Africa.

Aug.,2013 Financial modelling with strict local martingales, Strathmore University.

June.,2013 Financial modelling, Kenyatta University.

Aug.,2012 On modelling and pricing index linked catastrophe derivatives, University of Dar es salaam.

Research Funds/ Development Funds/Fellowships

2018 **Kenya Bankers Association**, Research grant.

2017 **The Ernst Mach-Nachbetreuungsstipendium(EZA)**, Post-doctoral research grant for research in Austria.

2015 **The World Academy of Science (TWAS) and German Research Foundation(DFG)**, Post-doctoral research grant for research in Germany.

2014 **IMU Berlin Einstein Foundation Program (DAAD)**, Post-doctoral research grant for research in Germany.

2012 **Coimbra group (European Union)**, Post-doctoral research grant for research in Italy.

2007–2010 **North-South dialogue (Austrian academic exchange)**, Doctoral research in Austria.

2003–2005 **East African Universities Mathematics Program (ICTP| ISP)**, MSc. research in Kenya.

Post-Doctoral Research Visits

July–Sept.,2017 Department of Mathematics, University of Graz, Austria.

May–Aug.,2015 Department of Mathematics, Technical University of Kaiserslautern, Germany.

Oct.–Dec.,2014 Institute for Mathematics, Technical University of Berlin, Germany.

Feb.,2014 School of Management studies, Actuarial science section, University of Cape town, SA.

Sept–Dec.,2012 Department of Mathematics, University of Padua, Italy.

Teaching and Instructions

Training in Higher Education Teaching

June 2018 Training on Grant Proposal writing,CBPS, University of Nairobi, Kenya.

April 19, 2018 Training for Actuarial Trainers, The Actuarial Academy of East Africa, Strathmore University, Kenya.

2017 Training in PhD supervision,CBPS, University of Nairobi, Kenya.

2010 Training in higher education teaching, Institute for Mathematical Sciences, Strathmore University, Kenya.

Teaching Evaluation Average

2014–2019 School of Mathematics, University of Nairobi, Exceeds expectation (as stated in the yearly performance contract).

PhD Theses Examinations and Committees

2017 Internal examiner-Ph.D thesis for Carolyne Adhiambo Ogutu. On construction of Multinomial Lattices for option pricing, *Ph.D in Mathematical Finance, University of Nairobi*.

2016 External examiner-Ph.D thesis for Sogunro Ashim Babtunde. Thesis title: On the adequancy of the pension scheme, using the salary structure of federal university in Nigeria, *Ph.D in Actuarial Science, University of Lagos*.

2016 Internal examiner-Ph.D thesis for Davis Bundi Ntwiga. Thesis title: Social network analysis of credit risk modelling, *Ph.D in Mathematical Finance, University of Nairobi*.

2014 Member of PhD examination panel for Rwigi Stephen Kibe. Thesis title: Comparative case study of Rainfall-Runoff models over the Nyando river Basin, *Ph.D in Meteorology, University of Nairobi*.

Recent Teachings- Graduate Courses

1. Probability and Stochastic theory, PhD in Statistics and Mathematical Finance course, 2016.
2. Advanced Financial Mathematics, PhD . Mathematical Finance course, 2019.
3. Advanced Financial Economics, MSc. Actuarial Science course, 2018.
4. Advanced Financial Modeling, MSc. Actuarial Science course, 2015.
5. Stochastic Processes, MSc. Actuarial Science course, 2017.
6. Finance Theory and Practice, Doctor of Business Administration course, 2015.

7. Quantitative Research Methods, Doctor of Business Administration course, 2016.
8. Advanced Financial and Investment Mathematics, MSc Actuarial Science, 2019.

Professional/Consultancy/ Industry

2016–Now **Reviewer**, Journal of Mathematical Finance.

2016–2019 **Banking and related Financial services technical committee member**, Kenya Bureau of Standards, Kenya.

2016–2019 **Securities and Financial Instruments technical committee member**, Kenya Bureau of Standards, Kenya.

2016–2017 **Capital Markets Resource Person**, Capital Markets Authority, Kenya.

Administration and Responsibilities

Jan 2020 **Acting Director**, School of Mathematics, University of Nairobi, Kenya.

2018–Now **Acting head of Actuarial Science and Financial Mathematics department** , School of Mathematics, University of Nairobi.

2017 **Developed PhD Financial Mathematics syllabus** , School of Mathematics, University of Nairobi.

2016–Now **Academic mentor of postgraduate students** , School of Mathematics, University of Nairobi.

2015–Now **Member of academic committee**, School of Mathematics, University of Nairobi.

2015–Now **Member of research and consultancy committee** , School of Mathematics, University of Nairobi.

2015 **Review of MSc and BSc Actuarial Science syllabus** , School of Mathematics, University of Nairobi.

2015 **Developed BSc Financial Mathematics and Financial Engineering syllabus** , School of Mathematics, University of Nairobi.

Community Outreach and Engagements

2018-Now **Seventh-Day Adventist Church Chaplain**, Kareng'ata SDA Church, Nairobi.

July 2016 **External Academic programme, MSc in Actuarial Science peer reviewer**, South Eastern Kenya University.

2016–2017 **School Patron**, Ondiko Primary School, Oyugis-Kenya.

June 2016 **Capital Market investors education**, Jomo Kenyatta University of Agriculture and Technology (JKUAT), Kenya.

Previous Appointments

2018 **Professor (Associate) of Mathematics**, Machakos University.

2016 **Dean Faculty of Science**, The Catholic University of Eastern Africa.

Referees

1 **Prof. Gunther Leobacher**, Institute of mathematics and scientific computing, Karl-Franzens University of Graz, Austria. E-mail: gunther.leobacher@uni-graz.at.

2 **Prof. David Taylor**, African Collaboration for Quantitative Finance and Risk Research, University of Cape Town, South Africa. E-mail: david.taylor@uct.ac.za.

3 **Prof. Leo Odiwuor Odongo**, Department of Statistics and Actuarial Science,, Kenyatta University, Kenya. E-mail: odongo.leo@ku.ac.ke.

4 **Prof. Patrick Weke**, School Of Mathematics,, University of Nairobi, Kenya. E-mail: pweke@uonbi.ac.ke.