

CURRICULUM VITAE

DR. AMINER, TITUS JACQUES ODHIAMBO, Ph.D. (Applied Mathematics)

Cell: +254720352006, +254786177803

Email Addresses: taminer@jooust.ac.ke
titusaminer@yahoo.com
aminertitus@gmail.com

Personal Address: - P. O. Box 160-40607, Ukwala-Kenya

Work Place Address: - School of Biological, Physical, Mathematics and Actuarial Science (SBPMAS)
Jaramogi Oginga Odinga University of Science and Technology
P. O. Box 210-40601, Bondo-Kenya

ACADEMIC RECORD

- Ph.D. **2014** Jaramogi Oginga Odinga University of Science and Technology, Kenya
- M Sc. **2007** Maseno University, Kenya
- B Ed. **1990** Moi University, Kenya

WORK EXPERIENCE (As University Full-Time Employee)

1st May, 2019 to date – Senior Lecturer

1st May, 2014 to 30th April, 2019 – Lecturer

1st July, 2011 to date – Jaramogi Oginga Odinga University of Science and Technology, Kenya

TEACHING EXPERIENCE

Jaramogi Oginga Odinga University of Science and Technology, Kenya

Basic Mathematics, Mathematics I, Mathematics II, Analytic Geometry, Calculus I (Differential Calculus), Descriptive Statistics, Calculus II (Integral Calculus), Ordinary Differential Equations (ODE), Fourier Analysis, Numerical Analysis I, Numerical Analysis II

Kabarak University, Kenya

Geometry and Applied mathematics, Vector Analysis, Numerical Analysis

Catholic University (CUEA)-Kisumu Campus, Kenya

Vector Analysis, Integral Calculus

Maseno University, Kenya

Introduction to Calculus, Analytical Geometry, Dynamics, Classical Mechanics, Fourier Analysis, Fluid Mechanics II, Operation Research II, Operation Research III

Kabianga University, Kenya

Numerical Analysis I, Ordinary Differential Equations I, Applied Differential Equations

PUBLICATIONS

Full length articles in specialist journals and refereed conference proceedings

1. **Odhiambo Francis, Titus Aminer, Benard Okelo, Julius Manyala** *Formulation of a Four-Species Food Web System with Prey Refuge and Holling Type III Functional Response*, World Wide Journal of Multidisciplinary Research and Development (WWJMRD), Vol. 9, No. 01, January 2023, **ISSN: 2454-6615**
2. **Kepha N. Mosiori, Aminer O. Titus and Asito S. Amolo**, *Patients Characteristics Associated with Tuberculosis Treatment Default: A case control study in high incidence area in Western Kenya* (GSJ), Vol 10, No. 3, March 2022, **ISSN 2320-9186**
3. **Kevin O. Wambura and T. J. O. Aminer**, *The Classical Lie Symmetry Approach to Solution of Modified Type of Burgers Equation* (IJMSE), Vol. 12, No. 3, May 2021, **ISSN: 2045-7057**
4. **Odhiambo Francis, T. J. O. Aminer, M. E. Oduor Okoya**, *Lie Symmetry Analysis of Modified Diffusive Predator-prey Competition System of Equations* (IJMSE), Vol. 11, No. 2, March 2020, **ISSN: 2045-7057**
5. **Kevin O. Wambura, M. E. Odour, T. J. O. Aminer**, *Lie Symmetry Analysis and the Exact Analytic Solution of Nonlinear Fourth Order Evolution Equation* (IJMSE), Vol. 11, No. 1, January 2020, **ISSN: 2045-7057**
6. **J. O. Awino, T. J. O. Aminer, T. M. Onyango, N. B. Okelo**, *Numerical Analysis of Mathematical Model for Carbon Pollution in Roads with Ventilated Embankments in Absence and Presence of Forced Convection*, International Journal of Multidisciplinary Sciences and Engineering (IJMSE), Vol. 9, No. 10, November 2018, **ISSN: 2045-7057**.
7. **T. J. O. Aminer**, *Determining Equations of Fourth Order Nonlinear Ordinary Differential Equation*, International Journal of Multidisciplinary Sciences and Engineering (IJMSE), Vol. 9, No. 5, May 2018, **ISSN: 2045-7057**
8. **J. O. Awino, T. J. O. Aminer, T. M. Onyango, N. B. Okelo**, *Mathematical Analysis of Carbon Pollution in Roads with Ventilated Embankments using Godunov FVM*, International Journal of Engineering and Mathematical Sciences (IJEMS), January – June 2018, Volume 13, Issue 1, **ISSN: 2319 - 4537**
9. **O.P. Miginjo, T. J. O. Aminer, N. Omolo Ongati**, *Nonzero Lie Brackets of Third Order Nonlinear Ordinary Differential Equation*, International Journal of Engineering and Mathematical Sciences (IJEMS), January – June 2018, Volume 13, Issue 1, **ISSN: 2319 - 4537**

10. **Rodgers K. Adenyah, Titus J.O. Aminer, Oduor M. Okoya**, *Lie Symmetry Solution of Fourth Order Ordinary Differential Equation: $y^{(4)} = (y)^{-1} y'y'''$* , International Journal of Multidisciplinary Sciences and Engineering (IJMSE), Vol. 8, No. 6, October 2017 – ISSN: **2045-7057**
11. **Rodgers K. Adenyah, Titus J. O. Aminer, Oduor Okoya M. (2017)**, *Use of Infinitesimal Transformations in obtaining the Generator of Harmonic Fourth Order Non-Linear Ordinary Differential Equation*, International Journal of Engineering & Scientific Research (IJESR), Volume 5 Issue 5, May 2017 – ISSN: **2347-6532**.
12. **H. A. Ochieng, T. J. O. Aminer and N. Omolo Ongati**, *Numerical Solution of Dynamic Vibration Equation*, International Journal of Engineering and Mathematical Sciences (IJEMS), Volume 10, Issue 1, December 2016 – ISSN: – **2319 - 4545**
13. **Seth H. W. Adams, N. Omolo Ongati, M. E. Oduor Okoya T. J. O. Aminer, (2016)**, *Two Dimensional Mathematical Models for Convective-Dispersive Flow of Pesticides in Porous Media*, International Journal of Engineering, Science and Computing (IJESC), Volume 6 Issue 10, October 2016 – ISSN: **2319-4539**.
14. **George O. Opiyo Nyangwe, T. J. O. Aminer, N. Omolo Ongati (2016)**, *Symmetry Analysis of Third Order Non-Linear Ordinary Differential Equation which is Cubic in the Second Order Derivative*, International Journal of Engineering and Mathematical Sciences (IJEMS), Volume 10 Issue 1 PP. 1-12, July-December 2016 – ISSN: **2319-4539**.
15. **Rodgers K. Adenyah, Titus J. O. Aminer, Oduor Okoya M. (2016)**, *Lie Symmetry Analysis: Fourth Order Nonlinear Ordinary Differential Equation as a case study*, International Journal of Engineering & Scientific Research (IJESR), Volume 4 Issue 6, June 2016 – ISSN: **2347-6532**.
16. **T. J. O. Aminer, N. Omolo Ongati, M. E. Oduor' Okoya (2016)**, *Lie Symmetry Solution of Fourth Order Nonlinear Ordinary Differential Equation, $\left(yy'(y(y')^{-1})'' \right)' = 0$* , International Journal of Multidisciplinary Sciences and Engineering (IJMSE), Volume 7 Issue 4, may 2016
17. **Kevin O. Wambura, Titus J. O. Aminer, M. E. Odour Okoya (2015)**, *Solution of Parabolic Partial Differential Equations of the form $u_t = u_{xx} + f(x,t)u$ using Lie Symmetry Analysis*, International Journal of Scientific Engineering and Applied Science (IJSEAS), Volume 1.Issue 9, December 2015 – ISSN: **2395-3470**.
18. **T. J. O. Aminer, B. N. Okelo (2014)**, *Wilson-Theta Algorithm Approach to solution of Dynamic Vibration Equations -IJMSC (International Journal of Mathematics and Soft Computing)- Vol.4, No.1 (2014), 7 – 15*
19. **Boniface O. Kwach., Alfred W. Manyonge., David O. Alambo., Titus J. O. Aminer (2013)**. *Solutions of Second-Order Partial Differential Equations in Two Independent Variables using Method of Characteristics*, International Journal of Multidisciplinary Sciences and Engineering (IJMSE), Volume 4, Issue 5, (ISSN:2045-7057)
20. **M.E. Oduor Okoya, T.J.O. Aminer, Hagai Amakobe James, Nthiiri Joyce Kagendo (2013)**, *Finite element approach to the solution of fourth order beam equation $u_{tt} + c^2 u_{xxxx} = fx,t$* , -IJESM Vol 2, Issue2, ISSN 2320-0294
21. **M.E. Oduor Okoya, N. Omolo Ongati, T.J.O. Aminer, J. Nyakinda Otula (2012)**, *Symmetry Group Approach to the Solution of Generalized Burgers Equation: $U_t + UU_x = \lambda U_{xx}$* -Applied Mathematical Sciences, Vol. 7, 2013, no. 15, 717 - 725

22. **Aminer Titus, Benard Okelo (2011)**, *Differential equations and applications*-LAP LAMBERT Academic Publishing, ISBN: 978-3-8465-2609-5
23. **T. J. O. Aminer, B. N. Okelo, N. Omolo Ongati, M. E. Oduor (2011)**, *Numerical Solution of Dynamic Vibration Equations*-IJMA (International Journal of Mathematical Archive)-2(9), 2011, Page: 1489-1494.

SUPERVISIONS

Doctor of Philosophy (Ph. D)

- **Wambura, Kevin Odundo**: *Lie Symmetry Analysis of Nonlinear Fourth Order Evolution Equation*. PhD. (Applied Mathematics)-JOOUST. (July, 2016) – **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (December, 2020)**
- **John Otieno Awino**: *Mathematical Modeling of Airflow and Carbon Pollution by Vehicles on Roads with Ventilated Embankments in the Absence and Presence of Forced Convection*. PhD. (Applied Mathematics) JOOUST – **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (November, 2019), (NRF Funded)**.
- **Rodgers K. Adenyah**: *Lie Symmetry Analysis: Fourth Order Nonlinear Ordinary Differential Equation as a case study*. PhD. (Applied Mathematics) JOOUST - **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (November, 2019)**
- **Florence Akinyi Adongo**: *Mathematical Modelling of COVID-19 and Diabetes Comorbidity under Vaccination*, PhD. (Applied Mathematics)-JOOUST (Expected Completion Date, 2023) - **WORKING ON THE THESIS**
- **Odhiambo, Francis**: *Dynamical Analysis of a Four-Species Food Web System with Prey Refuge and Holling Type III Functional response*, PhD. (Applied Mathematics)-JOOUST (Expected Completion Date, 2024) - **WORKING ON THE THESIS**

Masters

- **Nyang’ute Dickson Collins Ouma**: *Numerical Analysis of Holling Type II Functional Response Predator-Prey Model with Time Delay Optional Selective Harvesting*, MSc. (Applied Mathematics) JOOUST - (Completed and successfully defended his thesis) **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (3RD MARCH 2023)**
- **Samuel Owiti Olima**: *Numerical Analysis of Third Order Advection-Viscous Wave equation Using Finite Difference Method*, MSc. (Applied Mathematics) JOOUST - (Completed and successfully defended his thesis) **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (3RD MARCH 2023)**
- **Odhiambo Francis**: *Lie Symmetry Analysis of a Modified Diffusive Predator-Prey Competition System of Equations*. MSc. (Applied Mathematics)-JOOUST (2018) – **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (April, 2022)**
- **Kepha N. Mosiori**: *Determinants of Default from Treatment among Tuberculosis in Rachuonyo North Sub County, Homabay County, Kenya*. Master of Public Health in Epidemiology – **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (April, 2022)**

- **Odongo, Peter Miginjo:** Lie Symmetry Solutions of Third Order Non-Linear Ordinary Differential Equations. MSC. (Applied Mathematics)-JOOUST. – **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (December 2018) (NRF Funded)**
- **Wando, Stephen Odhiambo:** Drug and Substance Use and Its Predictors Among the Youth in Nyamira Sub County, Nyamira County. Master of Public Health in Epidemiology – **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (December, 2018).**
- **Ochieng' Hellen Atieno:** Numerical Solution of Dynamic Vibration Equations. MSc. (Applied Mathematics)-JOOUST. **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (March, 2018).**
- **Wambura, Kevin Odundo:** *Solution of Parabolic Partial Differential Equations of the form $u_t = u_{xx} + f(x,t)u$ using Lie Symmetry Analysis.* MSc. (Applied Mathematics)-JOOUST – **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (May, 2016). (NACOSTI Funded)**
- **Nyangwe, George Ondiek Opiyo:** *Symmetry Analysis of Third Order Non-Linear Ordinary Differential Equation which is Cubic in Second Order Derivative,* MSc. (Applied Mathematics)-JOOUST - **SUCCESSFULLY DEFENDED HIS THESIS, GRADUATED (May, 2015).**

PROFESSIONAL SERVICES

- **External Examiner of Applied Mathematics of Kaimosi Friends University** with effect from October, 2022
- **Senior Examiner of Mathematics, Kenya National Examinations Council (KNEC)** (1994 to date)
- Preparing Mathematics and Scientific documents using **Latex processing package, GNU plot graphics, Tex Card graphics**

TEACHING WORKSHOPS ATTENDED

- Sharing our Practice: Continuing Professional development seminar at Bondo University College/ Gabriele Strohschen, Visiting Professor (DePaul University-Chicago), December, 2011.
- International School on Mathematical Epidemiology – (ISME 2014) 1st -5th September 2014 at Strathmore University-Kenya.

ADMINISTRATIVE EXPERIENCE

- **Director, University Timetabling (w.e.f 1st February 2023 to date)**
- **University Coordinator Timetabling (Teaching and Examinations) (w.e.f 1st March 2016 to 31st January, 2023)**
- **School of Mathematics and Actuarial Sciences Representative in the University Senate,** (January 2014 to 1st March, 2016)
- **School of Mathematics and Actuarial Sciences Coordinator of Examinations,** (September 2013 to 1st March, 2016)
- **Representing Dean,** School of Mathematics in Academic Board's Meeting (October-December, 2011)

- **Principle Administrative officer** in-charge of **Monitoring and Evaluation** at Teachers Service Commission Headquarters (2009-2011)
- **Chief Staffing Officer (TSC)** at both District and Provincial Level (2001-2009)
- **Team Leader** of Mathematics Marking by Kenya National Examinations Council (2004 to date)
- **Head of Department**, Mathematics at High School level (1996-2001)

COMMUNITY OUTREARCH

- Member of Board of Management of Siwar Mixed Secondary School (w.e.f 1st November, 2018 to date)
- Executive Member of Parents/Teachers Association of St. Francis, Rangala Girls School (w.e.f 2014)

RESEARCH INTERESTS

- *Lie Symmetry Analysis of Differential Equations*
- *Numerical Solution of Differential Equations*
- *Mathematical Modeling*

SEMINARS

- *Mean Value Theorem and Sub-Harmonic Functions* (Department of Mathematics and Applied Statistics, Maseno University, Kenya, 2007)
- *Numerical Solution of Dynamic Vibration Equations* (Department of Mathematics and Applied Statistics, Maseno University, Kenya, 2007)
- *Lie Symmetry Solution of Nonlinear Fourth Order Ordinary Differential Equations (JOOUST, 2014)*
- *Participating and Presenting in The Mathematical Modeling session during the 3rd Strathmore International Mathematics Conference from 3rd to 7th August 2015*

SOCIAL INTERESTS

Computer Chess Game, Computer Scrabble Game, Music and Football.

REFEREES

- Professor Bernard N. Okelo. Dean, SBPMAS
Jaramogi Oginga Odinga University of Science and Technology
P. O. Box 210-40601
Bondo
Cell: +254 723397455
- Professor Omolo Ongati Full Professor of Applied mathematics, SBPMAS
Jaramogi Oginga Odinga University of Science and Technology
P. O. Box 210-40601
Bondo
Email: nomoloongati@gmail.com
Cell: +254 723340602/+254 773516814

- Professor Regina O. Nyanja Former Dean, SBPMAS
Jaramogi Oginga Odinga University of Science and Technology
P. O. Box 210-40601
Bondo
Cell: +254 721465969