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## Curriculum Vitae

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### Personal information

First name(s) / Surname

**Januarius Ondiek Agullo**

Address

Department of Environmental and Biosystems Engineering,  
University Nairobi,  
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Nationality

Kenyan

Date of birth

18 May 1974

Gender

Male

### Objectives

To work in an environment dedicated to dissemination of knowledge, creativity, research, implementation and evaluation of projects, and decision-making. To be a lifelong learner so as to empower me with state of the art methods that will ensure that I make quick and positive contributions in such an environment.

### Work experience

Dates

October 2014 onwards

Occupation or position held

Lecturer

Main activities and responsibilities

Teaching undergraduate and post graduate courses in Engineering Sciences, Information Technology, Agricultural Structures, Agricultural Machineries and Data Science

Name and address of employer

Department of Biosystems and Environmental Engineering, University of Nairobi

Type of business or sector

Educational institution

Dates

October 2010 – October 2014

Occupation or position held

Tutorial Fellow

Main activities and responsibilities

Teaching undergraduate courses in Engineering Sciences, Information Technology and Agricultural Structures.

Name and address of employer

Department of Biosystems and Environmental Engineering, University of Nairobi

Type of business or sector

Educational institution

Dates

October 2004 - October 2010

Occupation or position held

Part-Timer Lecturer

Main activities and responsibilities

Teaching Engineering Sciences, Information Technology and, Agricultural Structures and Processing undergraduate courses

Name and address of employers

Department of Biosystems and Environmental Engineering, University of Nairobi; School of Engineering and Technology, Kenyatta University; Biomechanical and Environmental Engineering, Jomo Kenyatta University of Agriculture and Technology.

Type of business or sector

Educational institutions

Dates

May 2004 - November 2004

Occupation or position held

Contracted Senior Technologist

Main activities and responsibilities | Bridged the gap between theory and practical work; designed and conducted practical sessions; developed and implemented departmental website and newsletter.

Dates | March 2004 – May 2004

Occupation or position held | Data Entry Specialist

Main activities and responsibilities | Feeding and retrieval of data from the SoW Computer Module and drafting of the report

Name and address of employer | Report drafting committee of the National Consultative Committee on the State of the World Animal Genetic Resources-Kenya. Department of Animal Production, University of Nairobi

## Education and training

Dates | Ongoing

Title | PhD candidate

Principal subjects/occupational skills to be covered | Thesis title: Environmental simulation model of a greenhouse: a three dimensional approach with agent-based intelligence decision support

Name and type of organisation providing education and training | Department of Biosystems and Environmental Engineering, University of Nairobi

Level in national or international classification | Public university

Dates | November 2001 – March 2005

Title of qualification awarded | MSc. in Agricultural Engineering

Principal subjects/occupational skills covered |

- Applied Mathematics
- Applied Statistics
- Project Management
- Proposal development
- Advanced courses in Agricultural Processing and Structures
- Applied Computer Programming

Name and type of organisation providing education and training | University of Nairobi, Kenya

Level in national or international classification | Public university

Dates | November 1995 – November 2000

Title of qualification awarded | BSc. in Agricultural Engineering

Principal subjects/occupational skills covered |

- Engineering sciences
- Concepts of Agricultural Engineering
- Engineering design
- Project management

Name and type of organisation providing education and training | University of Nairobi, Kenya

Level in national or international classification | Public university

Dates | February 1990 – November 1993

Title of qualification awarded | Kenya Certificate of Secondary Education

Principal subjects/occupational skills covered |

- Maths
- Pure sciences
- Agriculture

Name and type of organisation providing education and training | Mbita High School

Level in national or international classification | Provincial High School

**Personal skills and competences**

Mother tongue

**Dholuo**

Other languages

Self-assessment

**English**

**Kiswahili**

**German**

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user
Independent user	Independent user	Independent user	Independent user	Independent user
Basic user	Basic user	Basic user	Basic user	Basic user

Social skills and competences

- A team player
- A great collaborator in problem solving
- A great motivator of students under my instruction

Organisational skills and competences

- Pays great attention to details of any project I am responsible for
- Have multitasking skills
- Have ability to analyze situations and come forward with a logical solutions
- Have developed good problem solving skills enabling me to solve problems systematically
- Able to make tough decisions at quickly and efficiently

Computer skills and competences

Have a good command of the following:

- Operating systems: Windows and Linux
- Ms-office: Word, Excel, Access, Visio and Power point
- Typesetting: LaTeX, Lyx
- Programming: Pascal, Delphi, BASIC, C/C++, Rust, Fortran, Python and Scheme
- Statistical analysis: GENSTAT, S-Plus, SPSS, R, Python Scikit-learn and Tensorflow
- Computer Aided Design: AutoCAD and FreeCAD
- Computer Algebra Systems: MatLab, SciLab, Maxima and Octave
- Web-Page Design: HTML, Markdown and Dreamweaver
- CFD: OpenFoam, Fipy, FeN

Knowledge gained by self-study and online courses on learning platforms

## Teaching Experience

Have over sixteen years (16) years teaching experience at the university level. Course units instructed include the following:

### *University of Nairobi:*

- Mechanics of Machines (FEB 334)
- Thermodynamics (FEB 226; 321; 322; 421)
- Solid and Structural Mechanics (FEB 325)
- Information Technology (AEB 210)
- Computer Applications (FEB 213)
- Computer Science II (FME 281)
- Fluid Power (FEB 758)
- Computing II (BQS 301)
- Engineering Graphics(FEB 241)
- Database Design (AIC 602)
- Computation Fluid Dynamics (FEB 693)
- Experimental Stress Analysis (FEB 588)

### *Jomo Kenyatta University of Agriculture and Technology:*

- Environmental Control in Production structures (ABE 2509)
- Post harvest Technology of Perishable Crops (ABE 2502)
- Refrigeration and Air Conditioning (ABE 2504)
- Drying of Biological Products (ABE 2309)
- Post harvest technology of perishable projects (ABE2401)
- Introduction to Post harvest Technology (ABE 2302)

### *Kenyatta University:*

- Computer programming (SET 201; SET 309)
- Mechanic of Machines (SET 301; SET 403)
- Wind Energy Technology (SET 440)

## Other professional activities

### Professional registration

- Registered Graduate Engineer, Engineers Registration Board (ERB), Kenya
- Member, Kenya Society of Agricultural Engineers

### Research and consultancy experience

- Text Book Development: Revision of the Farm Structures Text Book Project in the Department of Environmental and Biosystems Engineering, University of Nairobi
- Post-harvest Technology: Resistance to airflow of parchment coffee
- Systems Modelling: Simulation of environment of greenhouses
- Simulation of irrigation canal networks, Hola irrigation scheme, Kenya
- End of project evaluation of Water and Sanitation projects, data analysis, world
- Natural resources mapping and management system development vision projects (Turkana, Samburu and Kilifi district), Kenya
- Software development of optimised power dispatch system for Kenya, Linear programming approach.

### Extension services

- Trainer (2012 - Date) with the Training Centre in Communications (TCC) based at Chiromo campus, University of Nairobi, through the School of Biological Sciences Linkage . Trains post graduate students on the use of the R software for statistical computing and graphics when invited.

### Workshops attended

1. Scientific communication and publishing workshop (Training Center in Communication and UoN, 2011)
2. Research and grant proposal writing workshop (UNES, 2012)
3. E-Resources training workshop (DAAD and ITOCA, 2013)
4. Pedagogy training workshop (UoN,CEPA, 2016)
5. Increased Food Security (Trilateral Workshop, United Kingdom, South Africa and Kenya, 2017)

### On-line courses completed with certificate of accomplishment

Have participated/audited the following course to learn new ideas on the specific areas and also to learn about the use of Internet technology in education.

1. Mastering systems thinking in practice (Open University, 2021)
2. Reproducible Research (Coursera, John Hopkins University, 2014)
3. Statistical Learning (OpenEdx, Stanford University, 2014)
4. The Science of Everyday Thinking (Edx, University of Queensland, 2014)
5. Street-Fighting Math (edx, MITx, 2014)
6. Sports and Building Aerodynamics (Coursera, Indhoven University of Technology, TU/E)
7. Modeling Engineered Systems (Coursera, NorthWestern University, 2014)
8. Machine Learning (Coursera, Stanford University, 2013)
9. Computing for Data Analysis(Coursera, John Hopkins University, 2013)
10. Data Analysis (Coursera, John Hopkins University, 2013)
11. Introduction to Computer Science and Programming (edx, MITx, 2013)
12. Introduction to Programming for Musicians and Digital Artists (Coursera, California Institute of the Arts, 2013)
13. Introduction to Mathematical Thinking (Coursera, Stanford, University, 2013)
14. Think Again: How to Reason and Argue (Coursera, Duke University, 2013)

## Publications

Have published articles and a book.

### Journal Articles

Kemboi M., Agullo J.O. & Mbuge, D.O. (in press). Effect of Column Variables on the Effective Mass Transfer Area and Efficiency in Packed Column. The East African Journal of Engineering

Kemboi M., Agullo J.O. & Mbuge, D.O. (in press). Effect of Column Parameters on the Overall Mass Transfer Coefficient in Randomly Packed Absorption Columns. The East African Journal of Engineering.

Obiero, J. P. O, Gumbe L.O., Omuto C. T., Hassan M. A., & Agullo J. O. 2013. Development of Pedotransfer functions for saturated hydraulic conductivity. Open Journal of Modern Hydrology.

Gumbe, L.O., Agullo J.O., & Brugger, M.F. 2009. Environmental simulation of a greenhouse system in Kenya. African Journal of Science and Technology. Vol. 10(2), pp. 108-121.

Agullo, J. O. & M. O. Marenja. 2005. Airflow resistance of parchment Arabica coffee. Biosystems Engineering. Silsoe Research Institute. UK. Vol. 91(2), 149-156.

Agullo, J. O. & M. O. Marenja. 2000. Resistance to airflow of bulk clean parchment Arabica coffee. Proceedings of Kenya Society of Agricultural Engineers (KSAE) Annual International Conference.

### Books

FAO. 2011. Rural structures in the tropics: design and development. Rome: FAO. Available online at: [www.fao.org/docrep/](http://www.fao.org/docrep/)

## Referees

Prof. Eng. Ayub N. Gitau,  
Associate Professor and Chairman, Department of Environmental  
and Biosystems Engineering,  
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P.O Box 30197 – 00100,  
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Dr. Duncan Onyango Mbuge,  
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