**Masters Training in Pure Mathematics**

The Sida Mathematics project at University of Dar es Salaam under competitive bases won a proposal among the 12 proposals funded by Sida Bilateral programmes of Sweden. The overall goal of this project is to build capacity for graduate training and research in mathematics at the University of Dar es Salaam (UDSM) through collaboration with Swedish universities. The Sida Bilateral programme sponsorship at UDSM was a five years from July 2015 – June 2020 and has been given extension of one year until June 2021.

This project sponsored eight (8) stundents in Masters in Pure mathematics programme. Eight (8) Masters Students are:

**Name:** Mr. Damas Karmel Mgani



**MSc title:** On Hilbert Functions and h-vectors of

Graded Modules for Finite Sets of Points in

Projective Space.

**Research Description:** Investigated the information

attached to Hilbert functions and h-vectors of graded

modules supported on finite sets of points in

projective geometry. These objects have been studied

over the years by different scholars and provided very

interesting results, but there is still a need to

investigate more.

**Current status:** Mr. Mgani graduated in November 2018.

**Email:** d.mgani99@gmail.com

**Name:** Mr. Faustine Nziku

**MSc Title:** Some Boyd and Wong Type Fixed Point



Theorems in Partial Metric Spaces.

**Research Description:** Investigated some fixed-

Point theorems by generalising the existing Boyd

and Wong type fixed point theorems in metric into

partial metric spaces. This generalisation is

motivated by Mathews (1992) due to his

establishment of partial metric spaces as the

important space to the study of denotational semantics for partially defined programmable data objects to programming languages.

**Current status:** Mr. Faustine graduated in November 2018.

**Email:** faustinenziku@gmail.com

**Name:** Ms. ScolasticaLuambano



**MSc Title**: Some fixed-point theorems for

F-contraction mappings in partial metric spaces.

**Research Description:** Extended the Wardowski

fixed-point theorem to partial metric spaces and

study the existing problems regarding

F-contraction mappings in partial metric spaces.

**Current status:** Mr. Mgani graduated in November 2018.

**Email:** sholawilgis@gmail.com

**Name:** Ms. Jesline Eliza Gowele



**MSc Title:** The structure of Lipchitz-free Banach

space (approximation properties).

**Research Description:** Investigated the

approximation property of a Lipschitz-free Banach

spaces, which is the main property in function

analysis especially in Banach spaces. A lot has

been done but still there are questions, which are

not yet answered.

**Current status:** Ms. Jesline graduated in May 2019.

**Email:** gowelejasline@gmail.com

**Name:** Mr. Richard Osward

**MSc Title:** Further Investigation on Fixed Points



Variational Inequality and Equilibrium Problems

**Research Description/Abstract:**

We introduce a gradient method to approximate a

common element of the set of solutions of variational inequality problem and the set of fixed points of

an asymptotically non-expansive mapping in a real

Hilbert space. Furthermore, we introduce an iterative algorithm to approximate a common element of the solution set of a generalized equilibrium problem and the set of fixed points of an asymptotically non-expansive mapping in a real Hilbert space. Lastly, we extended the results to a finite family of asymptotically non-expansive mappings. Some applications of the main results are also provided. We our results extend many previously known results in this research area.

**Current status:** Mr. Richard graduated in November 2019.

**Email:** ndabhiama1990@gmail.com

**Name:** Ms. Evelina Wilson

**MSc Title:** Investigation on some more properties



of ordered sets

**Research Description:** Investigate some more

properties of ordered sets, particularly the fixed

points, automorphisms and lattices.

**Current status:** Ms. Evelina graduated in June 2020.

**Email:** [evawilly86@gmail.com](mailto:evawilly86@gmail.com)

**Name:** Mr. Edson NzaganyaNzaganya

**MSc Title:** On the topology of projective



hypersurfaces.

**Research Description/Abstract**

Discussed the topology of the smooth projective

hypersurfaces. To do this, we start by a tour on

sheaf cohomology and Calculating the cohomology

of the projective space. This is followed by

computing the Euler characteristics of

hypersurfaces via the Griffiths residues. Next, we

attach a vector bundle on the smooth projective hypersurface to define Chern classes. Finally, we invoke the Gauss Bonnet theorem to compute the Euler characteristics of smooth projective hypersurfaces.

**Current status:** Mr. Edson graduated in June 2020

**Email:** edsonnzaganya@gmail.com

**Name:** Ms. Fatma Ali Rashid



**Research Title:** Maximal topology

**Research description:** In this study, we aim at

investigating the information attached to maximal

Lindelöf topology. This has been studied by different

scholars and good results were provided, but there is

still a need to investigate more concern with maximal

Lindelöf topology.

**Current status:**

**Email:** fatmaalirashid1@gmail.com