



MAKERERE UNIVERSITY

**COLLEGE OF ENGINEERING,
DESIGN, ART & TECHNOLOGY**

2022 ANNUAL REPORT





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**COLLEGE OF ENGINEERING,
DESIGN, ART & TECHNOLOGY**

**2022
ANNUAL
REPORT**

TO :

THE VICE CHANCELLOR

SUBMITTED BY :

THE PRINCIPAL CEDAT

20th January 2023

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VISION

Makerere University is a thought leader of knowledge generation for societal transformation and development.

MISSION

To provide transformative and innovative teaching, learning, research and services responsive to dynamic national and global needs.

GOAL

A sustainable research-led and responsive university with a highly productive workforce churning out versatile graduates.

CORE VALUES

- Accountability
- Professionalism
- Inclusivity
- Integrity
- Respect

STRATEGIC OBJECTIVES

1. To promote a flexible, appropriate and integrated learning environment that transforms students' experiences to respond to societal needs.
2. To strengthen research and innovations for sustainable development.
3. To sustain mutually beneficial engagements and partnerships nationally and internationally
4. To streamline institutional governance and management processes
5. To attract, recruit, and retain high-quality workforce
6. To provide facilities that meet our evolving needs.
7. To broaden the University financial resource base.

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ACCRONYMS

CCCC	-	China Communications Construction Company Limited
CEDAT	-	College of Engineering, Design, Art and Technology
CREEC	-	Centre for Research in Energy and Energy Conservation
IHCR	-	Institute of Heritage Conservation and Restoration
IUCEA	-	Inter University Council for East Africa
MakCHS	-	College of Health Sciences, Makerere University
MAPRONANO	-	Materials, Product Development and Nanotechnology
MTSIFA	-	Margaret School of Industrial and Fine Art
PI	-	Principal Investigator.
RCMRD	-	Regional Centre for Mapping Resources for Development
USAMRIID	-	United States Military Research Institute on infectious Diseases
UIRI	-	Uganda Industrial Research Institute

A WORD FROM THE PRINCIPAL

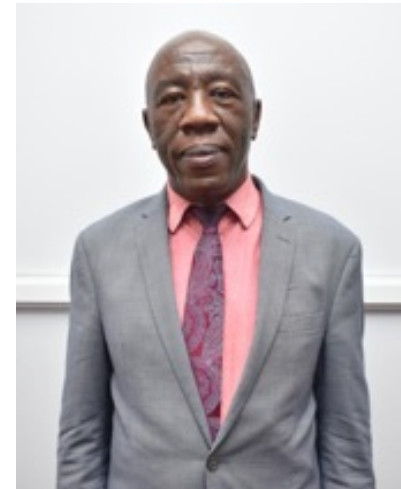
It is an honor once again for having come to the close of the Academic year 2022. It comes at a time when we are gradually returning to normalcy following the serious interruptions we encountered arising from the COVID-19 pandemic and the attendant challenges that ensued thereafter. We are delighted that as we come to the close of the year, we have been able to operate smoothly with our students in class and gaining from a true university experience that was missed out in the past. It was wonderful to see our students back in the lecture rooms and the laboratories as well as staff busy transferring knowledge as well as making efforts to improve on their experiences through various interactions and research.

I am very proud of our many achievements and successes and I'm delighted to share some of these with you in this year's Annual Report. As mandated, the College was able to present our students for graduation, with a record number receiving their diplomas and degrees. As our norm is, the college offered prizes to the best students.

At a College, effort was made to offer students with the opportunities, support and experiences to enable them forge a fulfilling and successful career upon graduation. We have therefore engaged in knowledge transfer in a number of ways and have encouraged the students to further their experience while at the college through student bodies and other networks.

The college continues to make all the necessary changes in the curricular to ensure that what is offered is in line with the needs of the society. Consequently, a number of programs are under review, with the newly introduced Master of Science in Land Management duly launched. This is testimony that we continue to firmly cemented our reputation as an ambitious college with influence, working with stakeholders is finding solutions to contemporary problems and therefore a force to rely on in the national development agenda.

We are looking forward to even a more successful period ahead of us, and together, definitely we shall achieve.



Prof. Henry Alinaitwe

THE COLLEGE MANAGEMENT TEAM

THE PRINCIPAL



Prof. Henry Alinaitwe

DEPUTY PRINCIPAL



Dr. Venny Nakazibwe

DEAN, SCHOOL OF
ENGINEERING,



Assoc. Prof. Dorothy Okello

Dean MTSIFA



**Assoc. Prof. Amanda
Tumusiime**

DEAN, SCHOOL OF THE
BUILT ENVIRONMENT,



**Assoc. Prof. Anthony
Gidudu**

1.0 INTRODUCTION AND BACKGROUND

1.1. Introduction

The College of Engineering, Design, Art and Technology (CEDAT) is a Constituent College of Makerere University as provided in Section 29 of the Universities and Other Tertiary Institutions Act as amended in 2006. It comprises former Faculties of Technology and the Margaret Trowel School of Industrial and Fine Arts (MTSIFA) and has been operational for 12 years.

1.2. CEDAT Mandate

This falls within the overall mandate of Makerere University namely;

- a) Provision of higher education through teaching and learning, research and knowledge transfer partnerships in Engineering, Design, Art and Technology;
- b) Dissemination of knowledge and giving opportunity of acquiring higher education to all persons regardless of sex, race, color or whether one has a disability or not.
- c) Provision of accessible physical facilities to the users of the Public University.

1.2. Mission Statement

To provide transformative innovative teaching, learning, research and outreach services responsive to dynamic national, regional and global needs in Engineering, Design, Art and Technology.

1.3. Structure and Administration in 2022

The college has an Academic Board and an Administrative Board as stipulated in the College Statute (2012). The Boards are comprised of members of staff at the College and student representatives. The Principal is the Chairperson of the two boards. Professor Henry Alinaitwe is the current Principal, deputized by Dr. Venny Nakazibwe. The Boards have committees whose function feed into the operations of the boards.

1.4. Schools, Departments and administrative offices

The College is made up of three (3) schools that are headed by Deans. They are charged with taking leadership in areas of programming, coordination and management of the respective units that are lined up according to the disciplines.

School of Engineering

The School of Engineering is comprised of the traditional engineering units namely; Mechanical Engineering headed by Prof. John Baptist Kirabira, Electrical engineering headed by Dr. Dorothy Kabagaju Okello as well as Civil and Environmental Engineering headed by Dr. Robinah Nakawunde Kulabako.

School of the Built Environment

Prof. Anthony Gidudu is the sitting Dean of the School, having replaced Prof. Moses Musinguzi on 7th February 2022. The School comprises of three departments i.e. Architecture and Physical Planning headed by Dr. Amin Tamale Kiggundu; Geomatics and Land Management headed by Dr. Lydia Florence Mazzi Kayondo-Ndandiko, and Construction Economics and Management headed by Dr. Nathan Kibwami in acting capacity.

Margaret Trowel School of Industrial and Fine Art



Assoc. Prof. Amanda Tumusiime (C) takes over office of Dean MTSIFA

Associate Prof. Amanda Tumusiime is the Dean of MTSIFA. She replaced Assoc. Prof. Kizito Maria Kasule on the 15th of October 2022. She superintends over the departments of Visual Communications headed by Mr. Paul Lubowa in acting capacity; the department of Industrial Art and Applied Design headed by Mr. Mwesigwa Stephen Luyombya; and the Department of Fine Art headed by Associate Prof. Ifee Francis Xavier.

1.5. Institute and Centres

CEDAT has one (1) Institute and six (6) Centres. Four of the centres are based at the college while two are supported at the international level.

Name of Institute/Centre	Area of focus	Target Group	Partners	Principal Investigator / Head
The Institute of Heritage Conservation and Restoration	Research in Art	Researchers Students	GoU, US Embassy in Uganda, GIZ	Assoc. Prof. George Kyeyune
Centre for Research in Energy and Energy Conservation	Rural electrification. Energy for productive use/household use Renewable energy technologies	Students General population	GoU	Ms. Susan Abbo (External staff)
Centre for Research in Transportation Technologies	Green Transport Technologies	Students Business Community	GoU	Dr. Hilary Kasedde
Centre for Technology Development and Transfer	Solar Technology	The community Industry Students		Dr. Michael Lubwama.
Centre for Geographical Information Systems (GIS)	GIS research Community Outreach Short courses	Community GIS users /specialists Researchers		Dr. Lydia M. Kayondo-Ndandiko.
The East African Centre of Excellence in Renewable Energy and Energy Efficiency (EACREEE)	Renewable energy	East African Community member states	UNIDO, ADA and supported by the East African Community.	Mr. Goddy Muhumuza
The Africa Centre of Excellence for Materials, Product Development and Nano Technology (MAPRONANO)	Nano Technology Materials development Nano medicine	Students Policy makers Industry	World Bank IUCEA MakCHS USAMRIID	Prof. J B M Kirabira

2.0. TEACHING AND LEARNING

2.1 Teaching Infrastructure

The College has in place infrastructure relevant for the teaching and learning as well as practical exposures to the students both graduate and under graduate. These include the Research laboratories, computer laboratories and lecture rooms in addition to the research centres. At MTSIFA for instance, the College hosts the Institute of Heritage Conservation and Restoration which is renowned for research in Art.

However, the infrastructure is not adequate in terms of number of classrooms and condition of maintenance. Many laboratories have obsolete equipment. Office space is far from being adequate as many staff have to share. There is therefore urgent need to improve on teaching infrastructure.

2.2 Teaching & Examination for Semester Two 11/2021/2022

The college offers undergraduate programs and a number of graduate programs. Of the graduate programs, 12 are Masters, and two Post Graduate Diploma (PGD) programs. The programmes are summarised in the table below.

Programs offered in various Schools in CEDAT

School of the Built Environment			
Department	Undergraduate	Graduate	
Department of Architecture and Urban Planning	Bachelor of Architecture Bachelor of Urban and Regional Planning	Masters	Ph.D.
		Master of Architecture MSc. Urban Planning and Design Post Graduate Diploma in Urban Planning and Design	PhD
Department of Construction Economics and Management	BSc Construction Management(Phasing out) BSc Land Economics BSc Quantity Surveying	MSc Construction Management Post Graduate Diploma in Construction Project Management	PhD
Department of Geomatics and Land Management	BSc Land Surveying and Geomatics	MSc Geo-Information Science and Technology MSc in Land Management(new)	PhD
School of Engineering			
Department of Civil and Environmental Engineering	BSc Civil Engineering	MSc Civil Engineering	PhD
Department of Electrical and Computer Engineering	BSc Electrical Engineering BSc Computer Engineering (Phasing out) BSc Telecommunication Engineering	MSc Power Systems Engineering MSc Telecommunications Engineering MSc Renewable Energy	PhD
Department of Mechanical Engineering	BSc Mechanical Engineering	MSc Mechanical Engineering MSc Technological Innovation and Industrial Development	PhD
Margaret Trowell School of Industrial and Fine Art			
All departments	Bachelor of Industrial and Fine Art (Phasing out)	Master of Arts in Fine Art	PhD
Fine Art	Bachelor of Fine Art (new)		
Industrial Art and Applied Design	Bachelor of Industrial Art and Applied Design (new)		
Visual Communication Design and Multimedia	Bachelor of Visual Communication Design and Multimedia (new)		

The Master of Science in Land Management Program launched



The Minister for Lands, Housing and Urban Development, Hon Judith Nabakooba, CEDAT staff and Scholarship beneficiaries pose for a photo at the Launch of the MSc Land Management Program on 21st December 2022.

The Master of Science in Land Management program offered by the Department of Geomatics and Land Management at the College of Engineering, Design, Art and Technology (CEDAT) was formerly launched on Wednesday 21st December 2022. The event was presided over by the Minister of Lands, Housing and Urban Development, Hon. Judith Nabakooba. Ten of the Fifty pioneer students of the two-year program that started during the academic year 2022/2023 received

scholarships from the World Bank. The program will focus on Land Tenure, Land Value, Land Use, Land Development and Research and Project management.

Hon. Judith Nabakooba extended her Ministry's appreciation to Makerere University and CEDAT in particular for developing a graduate program that was needed to leverage land management which is vital to the development of the country. She said her Ministry was

pleased that Makerere University started this program that will train the necessary staff required to help address the varied challenges faced in the land sector that include increased land conflicts and disputes across the country. It will tackle lack of protection of the land rights for women, the elderly and the marginalized groups, encroachment on the fragile ecosystem in search for fertile soils for cultivation, fraud in land transactions, as well as land fragmentation due to increased population among others.



Hon. Judith Nabakooba, Minister of Lands, Housing and Urban Development hands over world bank scholarships to 10 Masters Students

The program comes in at a time when the country is grappling with a number of land related challenges that include among others land rights for women, the elderly and the marginalized groups, encroachment on the fragile ecosystem in search for fertile soils for cultivation, fraud in land transactions, as well as land fragmentation due to increased population among others.

The program will produce graduands with knowledge and skills necessary to address such challenges in a holistic manner. This will in turn help in the realization of a number sustainable development goals through improved land governance and well-functioning country-wide land administration systems in place.

2.3 Industrial Training Program in CEDAT

Industrial training placements are some of the best practical learning exposure needed for students in the College Engineering, Design, Art and Technology. All the programs offered are practical in nature and therefore all students went for industrial training for the practical experience. During to COVID19, the training period was shorter and staggered.

2.4 Graduation output in 2022

The College presented its graduating students during the 72nd Graduation Ceremony on Friday 21st May 2022. Below is a summary of students who graduated.



The best performing students receive awards from the Chancellor during the graduation ceremony, May 27th 2022.

Number of students from CEDAT who graduated in May 2022

No.	PROGRAMME	No. of graduates		
		F	M	Total
1	Doctor of Philosophy	1	3	4
2	Bachelor of Architecture	2	13	15
3	BSc. in Computer Engineering	6	25	31
4	BSc. in Construction Management	15	26	41
5	BSc. in Land Surveying and Geomatics	26	39	65
6	BSc in Surveying	0	1	1
7	BSc. in Mechanical Engineering	15	57	72
8	BSc. in Quantity Surveying	20	21	41
9	BSc. in Telecommunications Engineering	15	32	47
10	Bachelor of Urban and Regional Planning	14	22	36
11	BSc. in Electrical Engineering	9	47	56
12	BSc. in Civil Engineering	16	79	95
13	BSc. in Land Economics	26	17	43

14	Bachelor of Industrial and Fine Arts	51	81	132
15	MSc. in Telecommunications Engineering	2	1	3
16	MSc. in Mechanical Engineering	0	3	3
17	MSc in Renewable Energy	2	3	5
18	MSc. in Technology Innovation and Industrial Development	2	4	6
19	MSc in Urban Planning and Design	0	2	2
20	MSc. in Construction Management	5	15	20
21	MSc. in Power Systems Engineering	1	2	3
22	MSc. in Civil Engineering	4	9	13
23	Master of Engineering (Civil)	0	3	3
24	MSc.in Geo- Information Science and Technology	10	15	25
25	Master of Arts in Fine Art	1	1	2
26	Post Graduate Diploma in Urban Planning and Design	0	7	7
27	Post Graduate Diploma in Construction Project Management	2	19	21
TOTAL		245	547	792

2.4 Number of students who sat exams in 2022

CEDAT conducted exams for two semesters . The number of students who sat exams for Semester I & II of Academic Year 2021/2022 is as below.

A) School of Engineering					
S/N	Department/ Program	Year	No. students Sem1.	No. students Sem 2.	Remarks
Mechanical Engineering					
1	BSc. Mechanical Engineering	1	155	170	4 courses combined: Mech. Eng, Agric. Eng, Bioprocess Eng, Water & Irrigation Eng.
		2	130	67	
		3	69	67	
		4	70	92	
2	MSc. Mechanical Engineering	1	14	14	
3	MSc Technological Innovation and Industrial Development	1	20	19	
Electrical and Computer Engineering					
4 and 5	BSc. Electrical Engineering & BSc Telecommunications Eng	1	167	161	Both Electrical & Telecom
		2	196	154	Both Electrical & Telecom
		3	102	65	
		4	58	85	Both Electrical & Telecom Eng.
6	BSc. In Computer Engineering	1	0	0	
		2	36	36	
		3	34	39	
		4	32	36	

7	MSc. In Power System Engineering	1	10	10
8	MSc Telecommunications Engineering	1	4	4
9	Msc. In Renewable Energy	1	10	9
	Civil and Environmental Engineering			
		1	120	118
10	BSc. In Civil Engineering	2	94	86
		3	85	93
		4	81	87
11	MSc Civil Engineering	1	30	19
		Total	1517	1431

B) School of the Built Environment

S/N	Program	Year	No. students Sem1.	No. students Sem 2.
	Architecture and Physical Planning			
		1	44	44
12	Bachelor of Urban and Regional Planning	2	27	26
		3	33	33
		4	22	20
13	Bachelor of Architecture	1	37	37
		2	37	38
		3	33	33
		4	26	26
		5	22	22
14	MSc. in Urban Planning and Design	1	13	13
15	Master of Architecture	1	2	2

16	PGD. In Urban Planning and Design	1	5	5	
	Geomatics and Land Management				
		1	50	50	
17	BSc. Land Surveying and Geomatics	2	36	37	
		3	33	33	
		4	32	31	
18	MSc. Geo- Information Science and Technology	1	18	18	
		2	10		
	Construction Economics and Management				
		1	51	51	
19	BSc. In Land Economics	2	52	52	
		3	56	57	
		4	33	32	
20	BSc. In Construction Management	1	17	15	
		2	45	45	
		3	46	48	
21	BSc. Quantity Surveying	1	58	58	
		2	35	34	
		3	51	49	
		4	43	44	
22	MSc. Construction Management.	1	29	29	combined with PGD -CM
		2	15		
23	PGD Construction Management	1			
		Total	1011	982	

C) Margaret Trowell School of Industrial and Fine Art				
S/N	Program	Year	No. students Sem1	No. students Sem 2.
		1	195	189
24	B.A in Fine Art	2	159	166
		3	140	141
25	Master of Arts in Fine Art	1	6	6
		Total	500	502
Summary				
	School of Engineering		1517	1431
	School of the Built Environment		1011	982
	MTSIFA		500	502
	Total		3028	2915

NB

Only those who sat exams

Some minor inaccuracies could be there because of retakers

Numbers do not include Masters and PhD students who did not sit exams

3.0. RESEARCH, INNOVATION & TECHNOLOGIES

3.1 Resource Mobilisation & Collaboration

Research and innovations continue to be some of the major outputs of the College. A lot of work has been undertaken and this is evident in the ever increasing grants received by staff in the College. In the period under review, CEDAT had a number of research projects supported from varied sources. Additional support was received from the Mak RIF project.

3.2. Running Projects in CEDAT 2022/22

The table below lists some of the ongoing project in the College in the reporting period.

Project	P. I	Funder Country	Currency	Budget
Volkswagen Foundation Grant No.96659	Dr.Peter Wilberforce Olupot	Volkswagen Foundation Germany	USD	32,677.40
AFRIWATSAN Project	Dr.Kulabako Robinah	The Royal Society UK	USD	64,340
Higher Education Partnerships For Sub Sahara Africa	Prof.Henry Alinanitwe	Royal Academy Of Engineering	UKP	200,000
Ruforum Project	Dr. .Akol Roselyn	RUFORUM Project Uganda	USD	14,000
PBL Project	Dr. Venny Nakazibwe	Finland Alto University Finland	USD	902,500
Improving Tenure Security Of Small Holder Farmers In Uganda	Dr. Musinguzi Moses	UN Habitant Germany	USD	315,000
Volkswagen Foundation Grant No.96655	Dr. Lubwama Michael	Volkswagen Foundation Germany	USD	40,000
T-Group	Dr.Kulabako Nakawunde Robinah	Newcastle University UK	USD	299,706
Transfer of Delft Based MSc/GPDP/OLC/OCC Program On Non-Sewered Sanitation	Dr. Swaib Semiyaga	The Delft Foundation Netherlands	USD	343,000

CAWESDEA Project–Capacity Water Eng. Sustainable Development Goals In East Africa	Dr.Jotham Sempewo	Tanzania Water Partnership Tanzania	USD	27,538
RCMRD/GEMES & Africa Project–Global Monitoring For Environment & Security	Dr. Anthony Gidudu	European Union & European Space Agency Kenya–Nairobi	USD	85,227
Building Innovative Delivery Systems For Water, Sanitation & Energy In Urban Africa (Off Grid Project.)	Dr. Robinah Kulabako	Economic And Social Research Council(ESCRC) UK	GBP	307,397
GCRF Africa Catalyst	Dr. Dorothy Okello	Royal Academy Of Engineering UK	GBP	100,000
Tum Seed Centre	Dr. Nabuuma Betty	Bayern Podewilsstr		69323.98
Africa Center Of Excellence On Materials, Product Development And Nano Technology	Prof. J.B Kirabira	World Bank New York	USD	6,000,000
Research on Integrated Planning of Water Sanitation and Hygiene (WASH) and Solid Waste Management (SWM) Services (INTEGRATE)	Niwagaba B. Charles	Switzerland	USD	192,722
Planning Grant for the Pathogen Flow Project	Niwagaba B. Charles	United States of America	USD	10,000
Metallization of Ugandan Iron Ores. Science, Technology and Innovation (STI),		Office of the President of Uganda.	UGX	440,195,000
Development of Iron Oxide Nanoparticles from steel waste for Applications in Drinking Water Treatment		Science, Technology and Innovation (STI), Office of the President of Uganda,	UGX	259,540,400
Iron oxide–based nanocomposite bio–adsorbents for water treatment.		EPFL– Switzerland/EXAF.	CHF	79,910
Multi–Year project grant– Technology for application of activated carbons from rice husks in water treatment.		Makerere University Research and Innovations Fund.	UGX	169,800,000
Development of zeolite based nano–composite filters for drinking water treatment in Uganda.		Makerere University Research and Innovations Fund.	UGX	166,000,000

3.3. Grants received in 2022

Grants Secured in 2022

1. **Jul 2022–Jun 2023. Principal Investigator.** Metallization of Ugandan Iron Ores. Science, Technology and Innovation (STI), Office of the President of Uganda. UGX 440,195,000
2. **Jul 2022–Jun 2023. Co-Principal Investigator.** Development of Iron Oxide Nanoparticles from steel waste for Applications in Drinking Water Treatment. Science, Technology and Innovation (STI), Office of the President of Uganda, UGX. 259,540,400
3. **Jun 2022–May 30, 2026. Principal Investigator.** Iron oxide-based nanocomposite bio-adsorbents for water treatment. EPFL- Switzerland/EXAF. CHF 79,910
4. **Jul 2022–Jun 2023. Principal Investigator.** Multi-Year project grant- Technology for application of activated carbons from rice husks in water treatment. Makerere University Research and Innovations Fund. UGX. 169,800,000.
5. **Jul 2021–Jun 2022. Co- Principal Investigator.** Development of zeolite based nano-composite filters for drinking water treatment in Uganda. Makerere University Research and Innovations Fund. UGX. 166,000,000.

3.4 Research Collaborations

CEDAT works in collaboration with a number entities. The following are some of the key partners that supported the efforts towards generating knowledge.

UNESCO China Funds –in -Trust project phase III.



A stakeholder engagement held on Thursday 10th November 2022 to discuss accomplishments in the 1st of the 3-year UNESCO China Funds –in -Trust project phase III.

The School of Engineering is spearheading a project, Higher Technical Education in Africa for a Technical and Innovative workforce (CFIT III), which is an initiative by UNESCO with support from the People's Republic of China. It aims at strengthening the linkages between the academia and industry and will among other things support a review of the existing engineering programs holistically in order to lay strategies for improvement.



Assoc. Prof. Dorothy Okello Addressing the stakeholder engagement at CEDAT

According to the Dean, School of Engineering, Assoc. Prof. Dorothy Okello, some steps had been taken towards implementing the set activities all aimed at making the needed improvements

on the curriculum in order to produce better engineering graduates. She explained during the stakeholder engagement that the School of Engineering specifically undertook the study on research infrastructure because the university according to its vision and strategic direction, was moving towards becoming research led. She called for continued engagements and contributions from the stakeholders whose questions and contributions were vital in enabling the School improve.

'The School of Engineering is implementing the CFIT III project through which intervention, the unit is expected to produce better trained, skilled, knowledgeable and highly employable engineering graduates that fit into the needs of the industry', she emphasized. The studies conducted included the Graduate Tracer Study, the Labor Market Analysis, and infrastructure at School of Engineering.

The presentation about the state of infrastructure in the School of engineering identified a number of areas that needed to be addressed across all engineering programs namely civil, mechanical, and electrical. The apparent gaps identified were staffing with less than 50% staffing levels. There was lack of space dedicated for graduate students, lack of specialists in many specialties, the limited academic staff, inadequate or even obsolete equipment as well as lack of maintenance policy for the equipment in the

school. Among the recommendations made was that the school of engineering needed to designate reading space for graduate students, drawing timetables for master's programs across the schools as well as ensuring that departments had strategic plans for guided approaches in recruitments in addition to involving graduate students as stop gap measures to address the staff shortage challenge.



CCCC visiting team inside one of the Laboratories at CEDAT

During the discussions, a number of issues arose including the identified challenge of employers that did not want to take on female engineers because of their peculiar needs like maternity and caring for children that affect their work output. The other issue was the changing job world for engineers, and the necessity for graduates to have skills needed today. It was indicated that there was need to adapt to the changing terrain to remain relevant, citing the need for soft skills among the engineering graduates.

Cooperation Between CEDAT and China Communication Construction Company

The two institutions came into an agreement to support the realization of their objectives when they signed a memorandum of understanding on November 2nd 2022. Engineering students and staff at CEDAT will get opportunity for hands on training from Chinese company, China Communications and Construction Company (CCCC) after signing a Memorandum of Understanding.



Ag. DVCFCA & Principal CEDAT (R) makes his remarks after signing the MOU

The MOU was signed by Prof. Henry Alinaitwe, the Principal of CEDAT and Acting Deputy Vice Chancellor Finance and Administration for Makerere University and Zhao Wei, the deputy General Manager of Overseas Department for CCCC.

Prof. Alinaitwe in his remarks said the University was interested in partnering with companies like CCCC in order to learn from their wide experience and expertise. 'China is a big force, contributing 20% of actual construction and works globally', he noted, adding that by working together, staff and students from the College of Engineering, Design, Art and Technology were destined to gain a lot in terms of experiences and exposure from a company that has been running for over two decades and whose work is up to international standards citing the Entebbe Express Highway as one of the projects undertaken by CCCC. He said the memorandum of understanding was to realize a number of mutually beneficial activities that include guest lectures, staff and student exchanges as well as internship opportunities for engineering students.

Mr. Zhao Wei, Deputy General Manager of Overseas Department at the China Communications Construction Company Limited (CCCC) introduced their company to the members present. He described it as a leading global service provider of ultra large infrastructure, mainly engaged in investment,

construction and operation of transportation infrastructure, equipped manufacturing, real estate and urban comprehensive design and construction. He said CCCC also provides its clientele with investment financing, consulting, planning, design and construction among other services. He said Makerere University was acknowledged among other institutions as the main producer of a large number of a young workforce and that by signing a memorandum of understanding, they were exploring the various ways of helping engineering students gain skills and knowledge to build their career and make more contribution to the nation.

'Makerere University is a cradle of talent and the School of Engineering produces the finest students in civil engineering, road and bridge construction as well as Architecture and Environmental and social management, that are needed in the industry, he noted. He said they were happy to engage with the School of Engineering and that the MOU signed signified commitment by both parties to work together towards realizing the common goals, purposely the pursuit of talented training through provision of expert personnel to impart skills to the students, hire of interns as well as offering Scholarships for the best engineering students.



© Jiang Ji Qing the Chinese economic chancellor at the Chinese embassy in Kampala

Jiang Ji Qing the Chinese economic chancellor at the Chinese embassy in Kampala said the collaboration with Makerere University was not only about construction but also for capacity building and sharing knowledge. 'We have quite a lot of construction companies in Uganda. CCCC has a lot of experience in East Africa and the world and therefore with over twenty years of experience would like to grow up with young talent who need to see in real life what construction is all about', she said.

While talking in the capacity of the Dean, School of Engineering, Dr. Abubaker Wasswa expressed optimism that the entire college would benefit from the newly acquired friendship between CEDAT and CCCC through the advancement of the impact of knowledge to both staff and students. The visiting entourage was taken on a guided tour of the various laboratories in the College that included the Public Health and Environmental Engineering Lab, the water resources Lab, the structural lab, the soil lab and the Highways lab. Significant concerns raised included limited space available in most of the labs, inadequate equipment, a number of which was old, amidst the limited financial resources available for proper maintenance of the equipment that is vital for teaching.

The Mak@100 painting challenge between MTSIFA and Xiantang University

The Margaret School of Industrial and Fine Arts, College of Engineering, Design, Art and Technology (CEDAT) in partnership with the Confucius Institute, Makerere University

celebrated the Mak@100 in a unique style with messages packaged in a seven-meter flower painting using acrylic on paper.



The Art work displayed by the students

MTSIFA students with their teachers headed by Prof. Francis Xavier Ifee unveiled the painting on Tuesday 28th September 2022 at Makerere Art Gallery also known as the Institute of Heritage Conservation and Restoration. Dr. Venny Nakazibwe, Deputy Principal CEDAT was at the event where students unveiled their work that exposed their artistic styles and prowess. The work done at MTSIFA was to be joined with work done at Xiatang University in China and the blend was one way of commemorating not only one hundred years of Makerere University but also Sixty years of diplomatic relationships between Uganda and China.

Dr. Nakazibwe said the relationships between the two nations was getting more strengthened with the teaching of Chinese language at Makerere University and urged all to embrace the opportunity as long as it lasts. 'Start learning some simple Chinese to be able to greet and relate with each other, do events together and enjoy the beauty of art. Look at the artistic development to get to know its philosophy', said Dr. Nakazibwe while addressing the students that took part in the challenge.

The Chinese Director Confucius Institute at Makerere University Xia Zhuoqiong extended the center's appreciation to the college for the tremendous support rendered in actualizing the concept. She specifically pointed out Prof. Ifee Francis Xavier for the tireless effort that led the activity to fruition in such a short time.

The Director who was accompanied by a team of Lecturers said the Institute was established in 2014 as a joint venture between Makerere University and Xiatang University in China. She said the center spearheaded the painting activity as one way of strengthening the diplomatic relationships between Uganda and China. 'It's important to us. We can't celebrate

without doing a thing" she said adding that there were already existing relationships between CEDAT and Xiatang University through staff and student exchanges. She said in future, efforts will be intensified in order to have joint exhibitions and research in fine art and other fields.



The Chinese Director of the Confucius Institute at Makerere University Xia Zhuoqiong talks to Dr. Venny Nakazibwe, and Assoc. Prof. Ifee

Prof. Ifee Francis Xavier extended his appreciation to the students for taking part in the event. He noted that with him was a team of talented and creative young artists who were able to undertake the painting in two days.

'The work which you have attempted was part of International Creative Challenge. You have contributed to the celebrations of Mak@100 through your work" said Prof. Ifee.

3.5. Research Innovations and Technologies

CEDAT is at the lead in as far as developing technologies is concerned by its nature and the kind of teaching and learning exposures offered. A number of innovations were unveiled in the period under review.



Participants in the Stakeholder engagement in Integration of Building Information Modelling (BIM) into Construction Education take off time to pose for a picture in front of the CEDAT Building, 22nd September 2022

Integrating Building Information Modelling (BIM) in Construction Education

The Construction and Economics Department at the College of Engineering, Design, Art and Technology (CEDAT) is undertaking a study to explore the possibilities of mainstreaming Building Information Modelling (BIM) into the curricula. With support from the Government of Uganda through the Makerere University Research and Innovations Fund (MaKRIF), the study is being conducted by a team led by Dr. Pamela Achieng, lecturer in the Department and others including Ms. Wesonga Rachael, Mr. Semanda Julius, Mr. Odongkara Billy Brian, Mr. Tom Mukasa and the Departmental Head, Dr. Nathan Kibwami.

A stakeholder engagement was held the 22nd of September 2022 during which it was explained that the construction industry contributes 12% of the GDP which is also gradually increasing and this was attributed to the increasing urbanization and population growth, which presented a need for a review.



Prof. Buyinza Mukadasi represented the Vice Chancellor at the meeting.

The Vice Chancellor Makerere University, Prof. Barnabas Nawangwe in his message delivered by Prof. Mukadasi Buyinza, Director Research and Graduate Training (DRGT) said the multidisciplinary nature of the engagement was a vital platform to enable the discussion

on the recent trends, innovations and practical challenges encountered in construction engineering and management with a view of informing the process of reviewing the academic curricula.

He made an observation that the construction industry was one of the least digitalized despite the rapid global growth of urban conglomerates, the increased construction activity in the country and the fact that it is one of the largest consumers of resources and produced enormous amounts of waste. He observed that the policy of circular economy that stressed the tenets of Reduce, Reuse, Recycle, and Recover was increasingly becoming important and urgent in the academic curricula given the increasing levels of urbanization and scarcity of resources.

Nawangwe said the issue of developing more suitable curricula for the construction management programs had been a subject of debated by the faculty for long. BIM which was described as the use of computer generated models to stimulate the planning, design, construction and operation of a facility was one of the viable solutions. It offers the potential to achieve objectives like project cost reduction, increased productivity and quality as well as timely delivery of work. He emphasized that construction management as a discipline needed to maintain a strong identity positioned between Architecture and Engineering, with the

graduates well prepared to meet the needs of the construction Industry. Prof. Nawangwe noted that digital technologies were vital for the department to improve on the learning environment, and it required a revision of the curricula by incorporating BIM and other computer aided technology to improve the performance of the built environment sector.



Dr. Nathan Kibwami, the Head of Department, Construction Economics and Management at CEDAT

Dr. Nathan Kibwami, the Head of Department, Construction Economics and Management at CEDAT noted that BIM was a collaboration that needed Architects, Quantity Surveyors, and Engineers to improve on the Construction Industry. He noted that there were a lot of challenges in the industry and that working together would help come up with better designs and structures. He charged the sister departments in the college to share this knowledge and help have BIM mainstreamed into their programs.



The Investigators

The Principal Investigator of the project Ms. Pamela Opio Achieng noted that BIM in Africa was yet to be appreciated. She said there were several theories that could be applied following consensus from the debates in order to reach a common ground. She pointed out that the review as proposed would take on the best strategies either as stand-alone courses or across existing disciplines. This could be realized when stakeholders agreed on the challenges at hand like not having the teachers trained in BIM as it is now, as well as the need to impart skills and not only BIM to students. She further noted that the curricula could not be reviewed without the involvement of the Industry. The stakeholders at the consultative meeting included representatives from Professional Bodies like Uganda Institute of Professional Engineers (UIPE), Association of Consulting Engineers, Surveyors Registration Board, Architects Registration Board, Engineers Registration Board among others.

The discussion on the integration to Building Information Modelling in Construction Education comes in at a time when many countries are increasingly making BIM mandatory for infrastructure projects. It has also been realized that projects that used BIM reduced costs and project duration.

The study however established that financial constraints and lack of training opportunities were barriers to BIM adoption in Uganda's construction Industry, with lack of skilled trainers as another hindrance.

The Worldwide Universities Network Executive Director Visit to CEDAT



Prof. Peter Lenny (c) flanked with Dr. Venny Nakazibwe, Deputy Principal (L) and Prof. John Mango (R)) with CEDAT leaders.

Prof. Peter Lenny, Executive Director World Wide Universities Network (WUN) visited CEDAT in March 2022 where he held discussions with the Faculty about the possible areas of collaboration with the network. He was accompanied by Prof. John Mango the Makerere University WUN Coordinator.

The Deputy Principal Dr. Nakazibwe while giving a brief profile of CEDAT said the College was multidisciplinary in nature and research alive in terms of networks and connections. She said CEDAT was comprised of both Arts and Sciences in addition to the engineering disciplines. She informed the guests about the available centers of excellence that included Materials, Products Development and Nanotechnology (Mapronano), The East African Centre of Excellence for Renewable Energy and Efficiency (EACREE) and the Culture and Heritage Research and conservation in the Arts.

During the discussions, a number of Heads of departments shared information about their research areas which could be the areas of collaboration with the Worldwide Universities Networks. These included Public Private Partnerships in the green economy, responsive

urban planning and designing, construction responsive to climate change, valuation of ecosystem services and the growing interest in the value of the ecosystem. Other areas were Transport planning and modeling, the use of satellite remote sensing in monitoring water quality as well as the integration of Artificial Intelligence and the use of Nano Technology to develop products.

In addition, the meeting pointed out the need to develop human settlements in general, developing local solutions to our problems. The other area that featured prominently was capacity building. It was noted that there were limitations in terms of personnel with the required specialization as the University geared towards becoming research led.

Prof. Peter Lenny, noted that the network had diverse talent of members geographically, culturally and legally and that they could support the ongoing efforts through comparative research. He said the kinds of issues addressed by WUN were part of the Sustainable Development Goals. He directed the staff onto the WUN websites in order to access the network.

4.0 MOUs SIGNED IN 2022

Entity signed with	Area of collaboration	Effective date	Term
Electricity Regulatory Agency (ERA)	Electricity regulation	14 th April 2022	5 years
China Communications Construction Company (CCCC)	Construction	2 nd November 2022	2 years
Kyambogo University	Research, supervision and examinations	31 st August 2022	5 years
Ndejje University	Research, supervision and examinations	31 st August 2022	5 years

5.0 EXHIBITIONS, PATENTS AND PUBLICATIONS

A number of research dissemination workshops were held with the view of sharing information and knowledge generated in the course of implementing projects. Some of the fora was used to add value to the work through validation seminars organized both at unit or departmental levels. The following are worth mentioning.



The DVCA F&A poses for a picture with staff from CEDAT and CCCC on 2nd November 2022 following the signing of the MOU.

5.1. Exhibitions and Conferences

In the past year, CEDAT participated in a number of exhibitions where innovations and new knowledge was shared with the public.

CEDAT at the National Science Week

The 2022 National Science Week has kicked off at the Kololo Airstrip from 7th to 10th November Running under the theme, "Uganda in 2040; The Future We Want Through Science Technology & Innovation. It included a public exhibition showcasing Ugandan innovations, an Investor Summit to drive investment into Ugandan science technology and innovation ventures, and various topical panel discussions bringing together various players within the science, technology and innovation value chain.

"Science and technology hold the key to the present and future development of Uganda and as a government, we are aware that to escape from poverty, investment in science and technology education is the key. This annual event is important as it brings together various players within the value chain to chart a way forward for Uganda's science, technology and innovation," said Dr. Monica Musenero, the Minister of Science, Technology and Innovation during the official opening of the Science Week.

Over 200 exhibitors in Science, Technology and Innovation – specifically in the fields of Pathogen Economy, Aeronautics and Space

Science; The Future of Infrastructure; Industry 4.0; Mobility and Productivity Acceleration, Import Substitution; Export Promotion and the science of support services.

Dr. Peter Olupot and his team were at the exhibition and they showcased their work in the project, Direct Reduction Technology for

The Meri'ba Exhibition of Photographs

Metallization of Uganda's Iron Ore. The study seeks to develop technology for application of gaseous reducing agents in direct reduction of Uganda Iron ores. The improvement of the processes is expected to add value to Uganda's iron ore by use of hydrogen.



Art exhibition about the West Nile stories ran from the 4th to 15th December 2022 at the Institute of Heritage, Conservation and Restoration.



Children with Disabilities fashion show at MTSIFA

Sculpture from locally available objects



Amy Petersen, Cultural Affairs Officer, US Embassy Kampala



Third year Sculpture students exhibited their work

A one week's Art exhibition featuring work by Sculpture students was held from 20th to 26th July 2022 at the Institute of Heritage, Conservation and Restoration, Makerere Art Gallery.



Excited students explain their work

The work on displayed was produced under the supervision of a US Fulbright Specialist and Sculptor Janet Goidner and MTSIFA staff that included Dr. Lillian Nabulime, Edward Balaba, Fidellis Nabukenya, Assoc. Prof. George Kyeyune and Assoc. Prof. Rose Kirumira.

Amy Petersen, the Cultural Affairs Officer, US Embassy Uganda officiated at the opening of the exhibition featuring Sculpture from found objects and local materials. In her remarks, she observed that the art work exhibited depicted the high level of creativity by the individual students and the messages cut across concerns like pollution, public health, environmental protection and more which were essential for the welfare of mankind.

She said it was fascinating to note that the students were able to use everything around them to pass out messages through their art works. She said the US embassy in Uganda was proud to partner with Makerere University and the School of Fine Art in particular and it was through such partnerships, she said, that the student's horizons could be expanded.

The 25th Edition of Different But One Art Exhibition honors departed colleagues

The Annual Different but One Art Exhibition was held in from September 19th 2022 to October 19th 2022 and it featured recent work by the teaching staff at Margaret Trowel School of Industrial and Fine Art (MTSIFA). It comprised all aspects of Art, painting, sculpture, ceramics, fashion, jewelry, weaving, video art and more. According to Rebeka Uziel, the curator, the exhibition was one of the means of recognizing the departed artists notably Mr. Fred Kizito Kakinda who was a Lecturer, Mr. Jacob Odama as well as General Elly Tumwiine.

'I'm thankful to you all for your support and trust in the creation of Different But One, that started as an idea floated by me and got propelled by faculty to become a unique concept in the Art World as far as I know' stated the curator in the catalogue.

Prof. George Kyeyune said Different But One was one of the distinctive features of the Margaret School of Industrial and Fine Art. He

said the forum provides a platform where the challenges of art as a medium of reflection and its prospects are discussed. The participating scholars not only felt appreciated as contributors to knowledge, but also got closely knit as a family.

He said due to Covid 19, the Different But One events were missed out in the previous years, but appreciated the fact the Silver Jubilee celebrations coincided with the Mak@100 celebrations. Prof. Kyeyune noted that the endurance of Different But One had its foundation in the conviction of its founders who decided that sharing ideas in their different disciplines was academically and socially rewarding. He commended Rebecca Uziel for her resilience in ensuring that she continued supporting the event since its inception in

1995. Participating members included; Rivka Uziel, Maria Kizito Kasule (PhD), Lilian Nabulime (PhD), Dr. Venny Nakazibwe, Prof Philip Kwesiga (PhD), Stephen Gwoktcho, Kasozi Dorah, Bruno Sserunkuuma, Ronald Mpindi (PhD), Assoc. Prof George Kyeyune among others.

Partnership with University of Bergen

The University of Bergen (UIB), Faculty of Art, Music and Design entered into a partnership with MTSIFA to work towards internalizing and nurturing local indigenous knowledge. The project will contribute to a multidisciplinary internationalization of higher education between global south and north with art, design, music, involving the two universities and independent enterprises linked to these disciplines.



A Team from University of Bergen visited the College and were received by the Deputy Principal and her team

The project aims to strengthen and develop curricula that investigates how a multidisciplinary approach to arts produced and displayed in public space can support skill and knowledge development within a framework of equitable education and cultural sustainability. This will be done through activities where local assets form the components of artistic practice and where collaborations between students, staff and professionals will provide training and build competence at both partner institutions.

It will in turn strengthen a long term partnership in educational exchange for the first time within multidisciplinary educational module that will be embedded in the curricular of two existing post graduate programs at UiB and will allow for the participation of students from Uganda through scholarships, exchange and short term workshops.

The five-year project will be conducted in four stages namely mutual academic staff mobility, student participation in workshops through blended mobility, full semester exchange and a full Master's program as well as the implementation of the new model. In all stages, online learning platforms will support team work, knowledge exchange and curriculum development. The result will be publicly disseminated in museums and galleries during the project and in major exposition at project finalization.

Kama Twende; The Collaboration for Active Mobility in Africa



(Courtesy photo) A non motorised section of Kampala road

The Collaboration for Active Mobility in Africa is a Partnership for Sustainable Solutions initiative in Sub-Saharan Africa funded by the Federal Ministry of Education and Research Germany (DAAD) and the German Academic Exchange Service (BMBF). The project that started in June 2021 to run until May 2025 is a consortium between five (5) universities namely Karlsruhe University of Applied Sciences (Karlsruhe, Germany), University of Kassel (Kassel, Germany), Makerere University (Kampala, Uganda), University of Nairobi (Nairobi, Kenya), Mekelle University (Mekelle, Ethiopia).

The Germany partners drawn from the different universities visited Makerere University from 7th– 9th April 2022. The main activities during the visit included an Internal meeting, stakeholder's engagement meeting, a workshop for mapping tool and survey, as well as a Bike tour with local groups/activists and stakeholders

The program aims at promoting walking and cycling which provide personal benefits that include good local accessibility as well as low

costs. Walking also offers social benefits since is free of emission, it is efficient and space-saving. The health benefits can be realised through its effect on reduced effect of rising non communicable diseases which benefits are essential for sustainable mobility. It recognizes that walking and cycling as forms of active mobility have frequently been overlooked in research and planning in Sub-Saharan Africa, and it is only in recent years that national and

local governments as well as international agencies, have focused more attention on this topic and provided infrastructure.

The goal of the project is to promote walking and cycling through data collection, development and uptake of tailor-made solutions, real-life experiments (living labs) as well as continuing Education for active mobility. In order to realise the objectives of the project, a number of activities are lined up and these include Data Collection to better capture the requirements of the pedestrians and cyclists and to illustrate their needs using digital surveys, qualitative interviews and crowd mapping approaches. This will take into consideration the needs of special population groups including women, persons with disability, children, and the elderly.

The project will also Develop and uptake of tailor-made solutions to promote walking and cycling by building learning alliances combining researchers, community representatives, decision makers and experts preparing real-life experiments otherwise called living labs and testing innovative solutions. The local learning alliances will be developed in Nairobi, Kampala and Mekelle and ensure that the research will be steered by the everyday challenges of traffic planning.

The real-life experiments will focus on small, tangible, partly digital and innovative solutions at community level for example the creation

Visit of the German partners to Kampala



of small car-free oases, building temporary closure of roads to car traffic, development of safe crossings, upgrading of roadside areas and many more, rather than focusing on big infrastructure and national policy development. These solutions can serve as a first step towards the promotion of active mobility and provide the foundation for more comprehensive activities.

HFBK University of Fine Arts Hamburg in Germany partners with MTSIFA

HFBK University of Fine Arts Hamburg in Germany got into partnership with Makerere University's Margaret Trowell of Industrial and Fine Art (MTSIFA). A team comprised of Prof. Ingo Ferdinand Offermanns, the Vice President and Professor of Graphic Art and Mr. Eik Pockrandt, Head International Office initiated the process during their three – day working visit to Makerere on July 20th 2022 when they met the Vice Chancellor, Prof. Barnabas Nawangwe.

The Vice Chancellor Prof. Barnabas Nawangwe welcomed the team and informed them that that the University was open to partnerships and collaborations in line with its policy of Internationalization. He said as one of the oldest Universities on the continent, Makerere was harnessing the achievements realized overtime through celebrating one hundred years of existence and was therefore open to new ideas and opportunities for both staff and students.

Nawangwe told the visiting team that the 100 years of service to humanity was a landmark worth celebrating because the University had made great contributions to the Human Resource and other forms of development in the region and globally over time.

Makerere's Margaret Trowell School of Fine Art was identified as one of the oldest and finest Schools of Fine Art in Africa that had overtime moved away from the traditional to other forms of Art as dictated by the changing trends and needs in the economy. He noted that with the ever increasing realization of people of varied backgrounds living together more than ever before, there was need for partnerships and collaboration and expressed the University's willingness to work closely with HFBK University of Fine Arts Hamburg in furthering its objectives.

The DVC F&A said Makerere University was proud to have a number of collaborations that included GIZ, SIDA, NORHED, DAAD, USAID and many more, through which relations a lot had been achieved, and welcomed the idea of the HFBK Hamburg University working with the School of Fine Art.

In the interactions with the Deputy Vice Chancellor Academic Affairs Prof. Umar Kakumba, the team was informed that Makerere had been consistent in the University rankings and that this was partly attributed to the International partnerships, the joint

research and collaborations such as the African Research Universities Alliance (ARUA), and the World Wide Universities Network (WUN), which forums help connect the University widely.

The Vice President of HFBK University of Fine Arts Hamburg Prof. Ingo Ferdinand Offermanns explained that the focus of their University was Fine Art. He said this was an International Fine Art School attracting students from all over the world and that their intention was to partner with outstanding Fine Art Schools all worldwide and hence their visit to Makerere University.

He explained that HFBK University of Fine Arts Hamburg was 250 years old, but a small entity specialized in fine Art traditional to Germany. He said their mission was to engage and get more African students to their University in their quest for partnerships and cultural exchange. 'Europeans have to go out and learn from others. Africans and Chinese have some knowledge about Europe and there was need for Europe to know more about others' he noted. While explaining their intention of having a student exchange program, the team said the idea was to bring together students to live and work together for a semester after which period, the student credit would be transferred to their mother University.

5.2 Conferences

The 7th National Communications Conference 2022



The College hosted the 7th National Conference under the theme Inclusive Digital Transformation through innovation. It was supported by a number of stakeholders that included the Uganda Communication Commission (UCC), the Research and Education Network for Uganda (RENU) and others. According to Dr. Edwin Mugumya, Chairman

organizing committee, the Conference is a forum that aims at strengthening ICT Based research and Innovation particular of local relevant solutions.

A number of activities were undertaken culminating into awarding the best performers in a number of categories that included researchers. Prof. Barnabas Nawangwe the Vice

Chancellor Makerere University commended the Uganda Communication Commission (UCC) for instituting the platform since 2010, which had enabled academia share their research and link them to the industry. 'The conference is an opportunity to showcase work, identify challenges and solutions to problems facing the sector'. He congratulated the researchers who were showcasing their work and while addressing himself on the theme of the conference, "Inclusive Digital Transformation through Innovation", he noted that this was in line with the objectives of the National Development Plan that emphasized the role of Innovation in development. Nawangwe noted that a number of innovations like Kiira Motors started as student innovations at the University.

The Vice Chancellor said with support from SIDA, NORAD, and the Government of Uganda, Makerere University had the best ICT infrastructure in Africa. He said with this, a lot had been achieved citing Makerere University students that won the Huawei ICT competitions in Africa. He further called upon the Government to create an enabling environment for Research and provide opportunities for Internships for the students. He expressed commitment that the University's Radio and TV stations were to be revived as a matter of urgency.



The Executive Director Uganda Communication Commission Eng. Irene Kaggwa Sewankambo said UCC was established to strengthen the Communication Industry in Uganda and inspire innovations. She said institutions like The Research and Education Network for Uganda (RENU) provided a forum for peer reviewed research work to discuss problems and seek solutions to have them redressed, through networking. She said the theme that was chosen for the conference resonated with the commitment that UCC has in facilitating a robust communication sector in Uganda. Eng. Sewankambo said COVID 19 led to embracing of virtual engagements, transactions and work and it set a new trend and hence the need to seek out the challenges and have them solved in order to improve the services in the society.



The UCC ED said this year 2022, the School ICT Clubs competition was included in the arrangements of the conference to enable students show case their ideas and enable them develop thinkers able to maneuver through the application of technologies in finding societal solutions. She said the other area of focus was the paper writing and publishing targeted to master's students in institutions that include Makerere, Kyambogo,

Mbarara and Ndejje Universities. The students cyber challenge she said, was aimed at ensuring that ICTs were used safely and productively. she said the academic community was therefore given support in Research and development of homegrown solutions to our problems.

CEDAT students benefit from a training by the Regional Centre for Mapping Resources for Development

50 Students in the College of Engineering, Design Art and Technology (CEDAT) were beneficiaries of a training in software knowledge and skills in the mapping and surveying industry that was conducted by the Regional Centre for Mapping Resources for Development (RCMRD) in partnership with SERVIR Global and the Department of Geomatics and Land Management Makerere University.

They were trained from 25th to 27th May 2022 at CEDAT conference hall and some of the areas covered included access of Earth Observation data, available platforms, and Earth Observation data-based methods for natural resource monitoring. The workshop also had an exhibition of state-of-the-art Earth observation technologies from which students were tasked and grouped to present their ideas and innovations in solving the country's environmental problems.



Students pose for a picture during the training

While speaking on behalf of the Vice Chancellor, Dr. Venny Nakazibwe, the Deputy Principal CEDAT said the training that was jointly organized by the Department of Geomatics and Land Management Makerere University was very crucial in the preparation of the students for the world of work. 'I understand that the Regional Centre for Mapping Resources for Development, Nairobi, through SEVIR Eastern and Southern Africa Project has developed a mentorship program geared at engaging university and college students to better understand Earth observation in resource management and prompting STEM uptake within 20 RCMRD member states' she said, adding that the collaboration rides on the 2018 memorandum of understanding between RCMRD and Makerere University.

Dr. Nakazibwe further said the University welcomes the opportunity of the mentorship program aimed at engaging University students to better understand the applications of space technologies for natural resource management. She expressed confidence that the students would acquire the skills and knowledge to enable them increase their opportunities to comfortably fit into the world of work in the broader field of space technology. Kenneth Kasera, the User and Engagement lead at Regional Centre for Mapping Resources for Development (RCMRD) said their focus was

on student capacity Assessment, skills uptake and linkages to the mapping and surveying industry. "The Mentorship program and such workshops emphasize use of software to build skillset, knowledge sharing and working as an innovation hub for student ideas to impact communities", added Mr. Kasera.

Mr. Paul Idude the Director Cooperate Affairs RCMRD urged students to focus and know what they want, to avoid being selfish with knowledge or skills acquired because they are only valuable when applied or passed on. He concluded by thanking all partner universities Makerere inclusive for the collaboratory avenues and assured that the institution he represents will continue taking on students to better their skills in the mapping and surveying industry.



Dr. Ronald Sengendo

Dr. Ronald Sengendo on behalf of the CEDAT administration thanked Regional Centre for Mapping Resources for Development (RCMRD) for emphasizing community impact and student trainings.

The "KUZA club" an umbrella body for university students seeking community impact through Environmental solutions, mapping and intensified surveying methodologies was also launched on that day.

Nano Technology and its application in Engineering, Science, Technology and Innovations.

CEDAT with support from MakRIF from 17th to 19th January 2022 conducted a Nano Technology Training Workshop that attracted a cross section of participants drawn from Telecommunication Engineering, Mechanical Engineering, Civil engineering, Bio chemistry, Plant sciences, Agricultural engineering, School of Chemistry as well as Environmental sciences. The participants had varied expectations and these included learning what Nano technology was all about and how feasible it was for it to be applied in Uganda. Others wanted to know how to derive energy using nano technology, and to establish as to whether this technology was already in use in Uganda. Yet others wanted to know how to relate nano technology to mechanical engineering and how best nano technology could be used in individual projects,

and the need to establish the morality aspects of nano technology.

Prof. John Baptist Kirabira, the MAPRONANO ACE centre leader and chair DoME-Mak described nano technology as a science, engineering and technology conducted at a nano scale. He said this technology had the potential of changing society through manipulation of objects on the atomic level, leading to products that were stronger, cheaper, smarter, cleaner and more precise. While explaining the origins of nano technology, he said it concerned the use of materials in their smallest scales. 'As you get the materials smaller, you can get a range of properties available, he explained'. He listed a number of products that include building products like cement, textile and fabric, marine products, cosmetics, electronics and computers, TVs, Batteries, which were smaller in size but longer lasting for example the solar cells in the solar panels.

Prof. Kirabira listed some materials developed using this technology such as the Magnetic Resonance Imaging (MRI), the catalytic inverters. He said studies were ongoing in the use of nano technology to treat water from pharmaceutical industries and development of covid 19 vaccination. Kirabira noted that nano technology was destined to redesign the future of several technologies, products and markets and that it would create the next generation

of billionaires and reshape global business. He said at CEDAT, there were a number of studies as well as applied research that being undertaken in collaboration with the Ministry of Science Technology and Innovations (MOIST) like the development of a re-usable mask. They are listed below;

Ongoing Research at MAPRONANO

- The Role of nanoparticles and Bacteriaophages in Preventing Emergence and Transmission of Carbapenem Resistant Enterobacteriaceae; by Kenneth Ssekatawa
- Synthesis and Characterization of Carbon Nano-Materials Using Catalytic Decomposition of Selected Plastic Wastes; by Kigozi Moses.
- Design and Fabrication of Chemical Sensor Based on Molecularly Imprinted Conducting Polymers Composite Nanomaterials for Aflatoxins Monitoring in Consumable Products; by Meikamu Biyana.
- Development of a Novel Based Nanofertilizer for improving productivity of poor soils in Uganda; by Ms. Nabyonga Lydia.
- Nano- water Filters for Provision of safe Drinking water in Developing Countries; by Wangi Godfrey.
- Effect of Dodonaea Viscose Var. Angustifolia (DVA) Derived Flavone Stabilized Nanoparticles on Growth and Pathogenicity of Candida Albicans; by Akudi Obi.
- Iron Oxide Nano Particles as Positive MRI Contrast Agents; by Ayor Semakula Andrew.
- Development of An Improved Bioactive Gauze Dressing Using Herb Loaded Nanoparticles to Facilitate Wound Healing; by Catherine Namugga.
- Optimization of the Electrical Resistivity of Magnetron Sputtered Aluminium and Barium Co-Doped Zinc Oxide Thin Films for Solar Cells; by Eneku John Paul.
- Effects of Selected Aggressive Ion on Alkali Active Geopolymer As Alternative Cement Made from Coconut Shell Ash; by Festus Musyimi.
- Modification of Cathode with Molecularly Wired Metallic Nanoparticles for Enhancing Light Trapping Efficiency of Polymer Solar Cells; by Galena Jebessa.
- Formulation of HDL Albendazole Nanoparticles for the Management of Cancer; by Robert Cherogony.
- MRI aided Nanoparticles Drug Release in Leukaemia Treatment; by Henry Kiwumulo
- Production of Activated Carbon From Cassava Peels for Industrial Waste Water Treatment in Uganda; by Kayiwa Ronald.
- Development of Graphene-based Bathroom agro- waste (coffee husks, bagasse) by Ivan Lubwama.

Applied Research at MAPRONANO

- Low cost rapid antigen based test kit for detection of active COVID -19 in Saliva in 5-10 minutes.
- An Antibody based ELISA assay for detecting antibodies to SARS-CoV-2 in patients.
- Evaluation of nanoscale materials as candidate adjuvants and delivery systems for SARS CoV-2 sub unit vaccine.
- Developed low cost hand sanitizer as a prevention measure for COVID 19.
- Bioactive nanocoated masks with antimicrobial activity.
- Paramagnetic nanoparticles for extraction of nuclear acids.
- Green synthesis of graphene from coffee husks and other agro wastes for energy storage applications.

CEDAT to train 100,000 Fundis and Masons

The department of Architecture and Physical Planning conducted a training for masons and fundis as a way of sharing information and experiences for improved services. This was done in partnership with makers of building materials that include Uganda clays, Steel and tube, plascon pain as well as the National Building Board.



Prof. Barnabas Nawangwe inspects an exhibition by makers of Building materials during the Fundis training at CEDAT

According to Prof. Barnabas Nawangwe, the training was timely because fundis and Manson handle most of the construction in Uganda that has experienced a construction boon since the 1990s 'On most of the sites, there are no engineers or architects and so it is important the people responsible in the building industry were equipped with extra skills" he said. He advised them to learn to appreciate drawings that show what needs to be done on sites

which has to be adhered to unless advised otherwise. The Vice Chancellor noted that although important in this field, many of the masons and fundis did not get the opportunity to get trained in technical institution but rather learnt on job. He said the training was in line with the government objective of skilling the youth thereby creating employment opportunities.



Dr. Amin Tamale Kiggundu at the training

Dr. Tamale Kigundu, Head, Architecture and Physical Planning Department said the plan was to train One Hundred Thousand Fundis, drawn from Kampala Metropolitan area and the newly created cities. The trainings were also a learning opportunity for both students and masons as thy got exposed to each other's experiences and knowledge. They were instructed through a number of areas that included the Building Codes, Ventilation, Doors, reading and interpretation of Building plans,

safety at the construction sites, among others. The Director, Directorate of Industrial Training in the Ministry of Education and Sports Mr. Byakatonda officiated at the closing ceremony on Friday 11th February 2022, where he said DIT was to partner with CEDAT in the training of Masons. He said DIT was responsible for all activities necessary to develop, apply, expand and improve the purposefulness of the application of Uganda Vocational Qualifications. He said DIT was certified by an International Organization for Standardization (ISO) to assure the public of the quality, safety, and efficiency of services and systems.

He said DIT undertook Prior Learning Worker's Practically Acquired Skills, what people learned on the job through life experiences regardless of where or how the learning took place, a process determined by occupational experts. He said the target groups included the disadvantaged and socially excluded men and women that did not benefit from formal training but had practical hands-on.



6.0 PUBLICATIONS

The List below shows some of the Publications by staff in the College;

1. 100284. <https://doi.org/10.1016/j.cscee.2022.100284>.
2. Adeleye, B.M., Ssemwogerere, K., Mukwaya, I.P., Kiggundu A. T., Omolo, F. and Kayondo, L.M. (2022), Modeling the Implication of Household Off-grid energy consumption in Suleja LGA of Niger State, Conference paper presented at the 2nd International Conference on Geographical Science for Resilient Communities, Ecosystems and Livelihoods under Global Environmental Change (GORILLA), 7-10th December 2022, Protea Hotel, Kampala
3. Ahabwe G. Z., Batega D.W, Ssewaya, A., Niwagaba, B. C., 2022. Governance conundrum in pursuit of the human right to water and sanitation: tracking the progress of the leave-no-one-behind principle in Uganda. *Journal of Water and Climate Change* 13(1), 83-95.
4. Arineitwe, F., Serugunda, J., & Okello, D. (2022, January). Development of the Protocol for Inter-Autonomous Systems Routing in Software Defined Networks. In 2022 IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC) (pp. 0414-0422). IEEE.
5. Avan de Vossenber, J., Hoiting, Y., Kamara, A. K., Tetteh, M. K., Simaika, J. P., Lutterodt, G., ... & Foppen, J. W. (2022). Double-Stranded DNA Virus Assemblages in Groundwater in Three Informal Urban Settlements in Sub-Saharan Africa Differ from Each Other. *ACS ES&T Water*, 1(9), 1992-2000.
6. B. Andrew, K. A. Buyondo, H. Kasedde, J.B. Kirabira, P. W. Olupot, A. A. Yusuf, Investigation on the use of reclaimed asphalt pavement along with steel fibers in concrete Case Studies in Construction Materials 17 (2022) e01356. <https://doi.org/10.1016/j.cscm.2022.e01356>.
7. Bamweyana, I., Musinguzi, M. and Kayondo, L. (2022) Evaluation of CHIRPS Satellite Gridded Dataset as an Alternative Rainfall Estimate for Localized Modelling over Uganda. *Atmospheric and Climate Sciences*, 11, 797-811. doi: 10.4236/acs.2022.114046.
8. Bamweyana, I., Musinguzi, M., & Kayondo, L. M. (2022). Evaluation of CHIRPS Satellite Gridded Dataset as an Alternative Rainfall Estimate for Localized Modelling over Uganda. *Atmospheric and Climate Sciences*, 11(4), 797-811
9. Beardsley, R., Cronk, R., Tracy, W., Fleming, L., Ng'ambi, M., Tidwell, J. B., & Manga, M. (2022). Factors associated with safe child feces disposal in Ethiopia, India, and Zambia. *International journal of hygiene and environmental health*, 237, 113832.
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11. Byagaba, E., & Mukilbi, S. (2022). The Relationship between Public Transport and the Location of Shanty Settlements in Kampala City. *East African Journal of Business and Economics*, 3(1), 130-146. <https://doi.org/10.37284/eajbe.3.1.365>
12. Chikafalimani, S. H., Kibwami, N., & Moyo, S. (2022). Management of Facilities at Public Universities in Africa: Current Challenges and the Way Forward. *Real Estate Management and Valuation*, 29(1), 21-29
13. Chikafalimani, S. H., Kibwami, N., & Moyo, S. (2022). Perceptions of academics on real estate topics in Africa. *Real Estate Management and Valuation*, 29(1), 30-40.
14. Fenekansi Kiwumulo, H., Muwonge, H., Ibingira, C., Kirabira, J. B., & Tamale Ssekitoleko, R. (2022). A systematic review of modeling and simulation approaches in designing targeted treatment technologies for Leukemia Cancer in low and middle income countries.

15. Gidudu, A., Letaru, L., & Kulabako, R. N. (2022). Empirical modeling of chlorophyll a from MODIS satellite imagery for trophic status monitoring of Lake Victoria in East Africa. *Journal of Great Lakes Research*.
16. Jjagwe, J., Olupot, P. W., Menya, E., & Kalibbala, H. M. (2022). *Journal of Bioresources and Bioproducts*.
17. Kayiwa, R., Kasedde, H., Lubwama, M., & Kirabira, J. B. (2022). Mesoporous activated carbon yielded from pre-leached cassava peels
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19. Kibwami, N., Wesonga, R., Manga, M., & Mukasa, T. (2022). Strategies for Improving Quantity Surveyors' Education Training in Uganda. *International Education Studies*, 14(2), 33-43
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21. Lubwama, M., Yiga, V. A., Ssempijja, I., & Lubwama, H. N. (2022). Thermal and mechanical characteristics of local firewood species and resulting charcoal produced by slow pyrolysis. *Biomass Conversion and Biorefinery*, 1-16.
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43. Nawangwe, B., Muwagga, A. M., Buyinza, M., & Masagazi, F. M. (2022). Reflections on University Education in Uganda and the COVID-19 Pandemic Shock: Responses and Lessons Learned. *Alliance for African Partnership Perspectives*, 1(1), 17-25.
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45. Ngobi, T. G., Manga, M., Kibwami, N., & Tutesigensi, A. (2022, September). Construction occupational safety and health incident reporting, recording, monitoring and management in Uganda. In *Proceedings of the 37th Annual ARCOM Conference* (pp. 269-278). Association of Researchers in Construction Management.
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7.0. THE HUMAN RESOURCE FUNCTION

7.1 Academic Staff Career Development/Promotion

During the period under review, there were a number of human resources related development in the College worth sharing with our stake holders.

Staff Who Obtained New Academic Qualifications

NAMES	GENDER	DEPARTMENT	PROGRAM	INSTITUTION	COMPLETION DATE
1. Makabayi Brian	M	Geomatics & Land Management	PhD	Makerere University	May 2022
2. Mazimwe Allan	M	Geomatics & Land Management	PhD	Makerere University	May 2022
3. Nakisanze Sarah Muyingo	F	Industrial Art and Applied Design	PhD	Makerere University	May 2022

Staff Who Were Promoted

NAME	GENDER	RANK PROMOTED TO	DEPARTMENT
1 Dorothy Okello K	F	Assoc. Professor	Electrical and Computer Engineering
2 Rose Kirumira Namubiru	F	Assoc. Professor	Fine Art
3 Fredrick Omolo	M	Senior Lecturer	Architecture and Physical Planning
4 Dr. Assumpta Nnaggenda Musana	M	Senior Lecturer	Architecture and Physical Planning
5 Dr. Kenneth Ssemwogerere	M	Senior Lecturer	Architecture and Physical Planning

Newly Appointed Staff In The University Service

NAME	GENDER	DESIGNATION	DEPARTMENT
1 Andrew Bwambale	M	Assistant Lecturer	Construction Economics and Management
2 Frank Semakula	M	Assistant Lecturer	Electrical and Computer Engineering
3 Mr. Collins Tulikuno	M	Assistant Lecturer	Construction Economics and Mgt
4 Clara Julia Batanda	F	Assistant Lecturer	Electrical and Computer Engineering
5 Ms. Winniefred Naluze	F	Assistant Lecturer	Industrial and Applied Design
6 Hilda Kyeeru	F	Assistant Lecturer	Architecture

7	Spencer Muhiire	M	Assistant Lecturer	VCDM
8	Richard Kamyia Lukenge	M	Assistant Lecturer	VCDM
9	Mike Brian Ndaula	M	Assistant Lecturer	Electrical and Computer Engineering

Appointed on Post Retirement contract

NAME	GENDER	DESIGNATION	DEPARTMENT	PERIOD
1. Rose Kirumira	F	Assoc. Professor	Fine Art	3 Years
2. George William Kyeyune	M	Associate Professor	Industrial Art and Applied Design	3 Years

7.2 STAFF TRANSFERED

NAME	GENDER	DESIGNATION	FROM (College)	TO
1. Lillian Tukairwa	F	Administrative Assistant	COVAB	Engineering, Design, Art and Technology
2. Oliver Mutinye	F	Administrative Secretary III	Information and Computer Technology	Engineering, Design, Art and Technology
3. Ruth Namusisi	F	Administrative Secretary I	Engineering, Design, Art and Technology	Information and Computer Technology
4. Lovinah Atuhaire	F	Administrative Secretary I	COVAB	Engineering, Design, Art and Technology
5. Christine Epodoi	F	Administrative Secretary III	Humanities and Social Sciences	Engineering, Design, Art and Technology
6. Patricia Nehoba	F	Copy Typist	Engineering, Design, Art and Technology	Humanities and Social Sciences

7.3 ACADEMIC STAFF ON PHD STUDY PROGRAMS

NAME	GENDER	DEPARTMENT	PROGRAM	INSTITUTION/UNIVERSITY	STUDY PERIOD		COMMENTS
					Start Date	End Date	
1. Ssembatya Martin	M	Mechanical Engineering	PhD	Texas A & M-USA	10-Aug-18	10-Aug-23	Study Leave Extended
2. Junior Patrick	M	Construction Economics & Management	PhD	University of Queensland, Australia	14-Apr-18	10 th -12-22	Study Leave Extended
3. Ariho Gordon	M	Electrical & Computer Engineering	PhD	Institute of International Education	31-Jul-17	31-Jul-22	On study Leave

4.	Nanyonga Margaret	F	Electrical & Computer Engineering	PhD	Durham University Dublin	01-Apr-20	31-Mar-24	On study Leave
5.	Mujuni Francis	M	Mechanical Engineering	PhD	Loughbrough University-UK	01-Oct-19	31 st -3-23	Study Leave Extended
6.	Nankunda Charity	F	Construction Economics & Management	PhD	University of Birmingham-UK	01-May-21	30-Apr-24	On study Leave
7.	Nakato Josephine Kakande Lutalo	F	Electrical & Computer Engineering	PhD	University of Paderborn-Germany	5-May-21	31-Jul-23	On study Leave
8.	Namujju Lilian Donna	F	Electrical & Computer Engineering	PhD	University of Paderborn-Germany	05-Jan-21	31-Jul-23	On study Leave
9.	Dativa Kagobora Tizikara	F	Electrical & Computer Engineering	PhD	University Of Manchester-UK	26-Sep-21	31-Jul-24	On study Leave
10.	Abeho Diana Rose	F	Geomatics & Land Management	PhD	University of Cape Town	01-May-21	30-Apr-24	On study Leave
11.	Kaconco James	M	Mechanical Engineering	PhD	Makerere University	24-Feb-22	25-Feb-25	Not on Study leave
12.	Muyonjo Geoffrey Mukiibi	M	Civil and Environmental Engineering	PhD	Ardhi University, Dar es Salaam	01-Aug-20	31-Jul-23	On Study leave
13.	Nsereko Joseph Raymond	M	Visual communication, design & multimedia	PhD	Makerere University	03-Nov-20	04-Nov-23	Not on Study leave
14.	Tumusiime Edmund	M	Mechanical engineering	PhD	Makerere University	05-Jan-16	28-Sep-21	Not on Study leave
15.	Were Andrew Gilbert	M	Architecture and Physical Planning	PhD	Makerere University	17-Oct-17	17-Oct-20	Registration period exp.

16.	Acheng Opio Pamela	F	Construction Economics & Management	PhD	University of Oxford, UK	3rd-10-22	2 nd -8-23	On Study leave
17	Micheal Atukunda	M	Civil and Environmental Engineering	PhD	University of Leeds in UK	1st-10-22	31 st -7-25	On Study leave

7.4 COLLEGE HEADSHIP AND HEADS OF UNITS/DEPARTMENT

NAME	GENDER	POSITION	SCHOOL/DEPARTMENT/UNIT
1. Prof. Henry Alinaitwe	M	Principal	CEDAT
2. Dr. Venny Nakazibwe	F	Deputy Principal	CEDAT
3. Prof. Amanda Tumusiime	F	Dean	MTSIFA
4. Prof. Anthony Giduddu	M	Dean	The Built Environment
5. Eng. Assoc. Prof. Dorothy Okello	F	Dean	Engineering
6. Dr. Kiggundu Amin Tamale	M	Head of Department	Architecture and Physical Planning
7. Dr. Nathan Kibwami	M	Head of Department	Construction Economics and Management
8. Dr. Lydia Mazzi Kayondo	F	Head of Department	Geomatics and Land Management
9. Assoc. Prof. Ifee Francis Xavier	M	Head of Department	Fine Art
10. Mr. Mwesigwa Stephen Luyombya	M	Head of Department	Industrial Art and Applied Design
11. Paul Lubowa	M	Head of Department	Visual Communication, Design and Multimedia
12. Dr. Robinah Nakawunde Kulabako	F	Head of Department	Civil And Environmental Engineering
13. Prof. Kirabira, John Baptist	M	Head of Department	Mechanical Engineering
14. Dr. Abubaker Matovu Wasswa	M	Head of Department	Electrical and Computer Engineering
15. Josephine Opolot Apolot	F	Principal Human Resource Officer	Human Resource Office
16. Musinguzi Harriet	F	Principal Communication Officer	Communication Office
17. Alfred Tingo	M	Senior Assistant Registrar	College Registrar Office
18. Namaganda Kanzira Agnes	F	Librarian 1	College Library
19. Ssambwa Ronald	M	College Bursar	Accounts Office
20. Ikomo David		Procurement Officer	Procurement Office

7.5 ACADEMIC STAFF ESTABLISHMENT

SUMMARY OF COLLEGE ESTABLISHMENT AS OF 31ST DECEMBER 2022

SCHOOL OF THE BUILT ENVIRONMENT

Department of Architecture and Physical Planning (DAPP)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	1	3	25.0
Associate Professor	4	1	3	25.0
Senior Lecturer	6	5	1	66.7
Lecturer	8	6	2	75.0
Assistant Lecturer	6	11	0	100
Total	28	23	5	82.1

filled positions at the Department as in December 2022 is 82.1%.

Department of Construction Economics and Management (DCEM)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	3	0	3	0
Associate Professor	3	0	3	0
Senior Lecturer	6	0	6	0
Lecturer	12	5	7	33.3
Assistant Lecturer	18	21	0	100
Total	42	26	16	61.7

Out of the filled positions (61.7%), the Department does not have members at the ranks of Professor, Associate Professor or Senior Lecturer.

Department of Geomatics and Land Management (DGLM)

	Established Positions	Filled	Vacant	% Filled
Professor	2	0	2	0
Associate Professor	2	2	0	100.0
Senior Lecturer	4	2	2	50
Lecturer	8	3	5	37.5
Assistant Lecturer	4	4	0	100.0
Total	20	11	9	55.0

Out of the filled positions (55.0%), the Department does not have a member at the rank of Professor

SCHOOL OF ENGINEERING

Department of Civil and Environmental Engineering (DCEE)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	0	4	0
Associate Professor	4	2	2	50.0
Senior Lecturer	9	1	8	11.1
Lecturer	12	6	6	50.0
Assistant Lecturer	15	8	7	53.3
Total	44	27	17	61.4

Out of the filled positions (61.4%), the Department does not have a member at the rank of Professor.

Department of Mechanical Engineering (DME)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	1	3	25.0
Associate Professor	4	1	3	25.0
Senior Lecturer	8	2	6	25.0
Lecturer	9	4	5	44.4
Assistant Lecturer	12	7	5	58.3
Total	37	15	22	40.5

The Department of mechanical Engineering is understaffed. The filled positions as December 2022 is only 40.5%.

Department of Electrical and Computer Engineering (DECE)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	6	0	6	0
Associate Professor	4	2	2	25.0
Senior Lecturer	10	0	10	10.0
Lecturer	15	10	5	80.0
Assistant Lecturer	16	17	0	100.0
Total	51	29	22	56.9

Out of the filled positions (56.0%) the Department does not have a member at the rank of Professor

MARGARET TROWEL SCHOOL OF INDUSTRIAL AND FINE ART (MTSIFA)

Department of Fine Art (DFA)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	0	4	0
Associate Professor	4	3	1	50.0
Senior Lecturer	6	1	5	33.3
Lecturer	6	1	5	33.3
Assistant Lecturer	5	5	0	100.0
Total	25	10	15	40.0

The Department of Fine Art is understaffed. Out of the 40.0% positions filled, there is no member at the level of Professor.

Department of Industrial Art and Applied Design (DIAD)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	0	4	
Associate Professor	4	2	2	50.0
Senior Lecturer	6	1	5	16.7
Lecturer	6	4	2	66.7
Assistant Lecturer	4	6	0	100
Total	24	13	11	65.0

Out of the filled positions (65.0%), the Department does not have a member at the rank of Professor.

Department of Visual Communication, Design and Multimedia (DVCM)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	0	4	0
Associate Professor	4	1	3	0
Senior Lecturer	6	0	6	0
Lecturer	6	3	3	66.7
Assistant Lecturer	4	6	0	100.0
Total	24	10	14	41.7

The Department of Visual Communication, Design and Multimedia (DVCM) is understaffed. The total filled positions as in December 2022 is only 41.7%.

7.6 OVERALL COLLEGE ESTABLISHMENT

Rank	Established Positions	Filled	Vacant	% Filled
Professor	35	2	33	5.7
Associate Professor	33	14	19	42.4
Senior Lecturer	61	12	49	19/7
Lecturer	83	51	32	61.4
Assistant Lecturer	84	85	0	100
Total	296	164	132	55.4

Out of the total established positions of 296, only 164 positions are filled, giving to percentage filled at 55

8.0 PROCUREMENT

Below is a summary of the procurements undertaken in the year 2022

JANUARY - JUNE, 2022.			
Month	Supplies	Services	Works
1 January,2022	115,000,000	-	-
2 February , 2022	316,588,713	-	-
3 March , 2022	-	-	-
4 April , 2022	137,658,735	-	-
5 May, 2022	341,308,028	-	-
6 June, 2022	736,097,492	-	-
TOTAL	1,646,652,968	NIL	NIL
JULY - DECEMBER, 2022.			
Month	Supplies	Services	Works
1 July ,2022	58,902,896	-	-
2 August, 2022	145,821,240	-	-
3 September , 2022	171,756,303	-	-
4 October , 2022	313,091,989	-	-
5 November, 2022	541,167,596	-	-
6 December, 2022	37,089,863	-	-
TOTAL	1,267,829,887	NIL	NIL
JANUARY –DECEMBER, 2022			
	Supplies	Services	Works
TOTALS	2,914,482,855	NIL	NIL

Total amount spent on procurement activities, **UGX: 2,914,482,855**

Achievements made

1. Procurement plan put in place for F/Y 2021-2022
2. Procurements done in accordance with the College Procurement plan
3. Timely delivery of assorted teaching materials for user units
4. Improved relationship with stakeholders
5. Timely payment of service providers.
6. Quality delivery of materials with zero defects.
7. Reduced procurement audit queries for the College.

Impediments / Challenges during the year in achieving stated goals and objectives:

- Some departments need constant reminders to submit procurement requisitions
- Un- realistic market surveys prices submitted on Procurement form
- Poor statement of requirements (Specifications and Terms of references)
- Poor planning by the user departments- users do not want to follow the procurement plans for the College.
- Increase in prices for the procurable items

due to inflation effects and taxes yet our budget does not increase. This leads to the procurement of few items which can fit within our college budget.

- Delays on warranting of funds on IFMS to enable user Departments to know the available funds to start procurement Process.
- Project investigators fail to submit procurement plans to be incorporated into the college procurement plan

Challenges have been handled by:

- Liaising with departmental heads, reduce material quantities to fit within planned budgets
- Advising and guiding user units to properly prescribe the requirements or develop clear specifications
- Principal investigators to be advised to submit procurement plans for incorporation into the College procurement plan.
- Improve the knowledge of user departments concerning the procurement process.

Suggestions on way forward:

- All requisitions for procurement of teaching materials must be submitted in the second week of the beginning of the semester to avoid delays and failure to achieve intended objectives!
- All ICT related requirement MUST be in line with the University directive of liaising with the Technical arm- DICTS! To help in development of proper specifications
- Use of framework contract prices posted on the University Intra-net for most commonly used item and ICT equipment's
- Improve engagements with various stakeholders to iron out communication gaps on procurement related matters.
- Users to submit their requisitions to College Procurement and Disposal Unit to carry out market research to obtain prices before filling Form 5 for approval by the Accounting Officer.

9.0 THE FINANCE FUNCTION

9.1. Budget Performance in the period

The table below shows a summary of the income and expenditure for the College in the period under review.

Item Description	Expenditure
Allowances(Parttime Teaching and Extra load)	443,384,084
Incapacity benefits (Employees)	600,000
Advertising and Public Relations	2,500,000
Staff Training	5,200,000
Books, Periodicals & Newspapers	784,000
Information and Communication Technology Supplies.	14,453,977
Welfare and Entertainment	122,709,894
Printing, Stationery, Photocopying and Binding	30,101,706
Membership dues and Subscription fees.	4,646,355
Information and Communication Technology Services	27,140,000
Postage and Courier	600,000
Property Management Expenses	19,416,400
Medical Supplies and Services	24,983,000
Educational Materials and Services	1,230,456,649
Travel inland	15,034,520
Fuel, Lubricants and Oils	52,852,272
Maintenance – Buildings and Structures	8,839,000
Maintenance – Transport Equipment	7,481,600
Maintenance – Machinery & Equipment Other than Transport Equipment	5,875,600
Maintenance – Other Fixed Assets	22,853,000
TOTAL	2,039,912,057

NOTES TO FINANCIAL STATEMENTS.

- The College was able to pay all the part time lecturers who taught and submitted results.
- The College procured and paid for teaching materials, internship materials, and Recess term materials, Examination materials, Industrial Supervision, Recess term supervision and Field work activities.
- We were able to carry out minor repairs to the offices, lecture rooms, student chairs, students and staff toilets to improve on the learning and working environment for students and staff.
- The College procured and paid for cleaning materials to ensure that the teaching and working environment is clean.
- We paid for assorted stationery and Fuel to enable the college administration offices operate smoothly.
- The College catered for staff welfare by providing break tea to all staff, Eats and refreshments during meetings, vivas, PhD defense etc.

CHALLENGES

1. Insufficient budget ceiling given to the College.
2. Delays in releasing of funds which affect the college work plan
3. The college has many part-time lecturers who consume a bigger percentage of the budget because we need their services.
4. The College being a science based, it has many Laboratories which need a lot of maintenance yet funds are not enough.
5. We budget for Capital Development but funds are never released.
6. Computers in the Labs and Offices are all obsolete which need to be replaced but because of budget constraints we cannot replace them.

RECOMMENDATIONS:

1. University Management should consider to increase on the Budget ceilings for Science based Colleges.
2. Funds should always be released as per the work plan.
3. University Management should consider to recruit permanent staff.
4. University Management should put in place a special allocation for equipping and maintenance of Laboratories.

10.0 THE ICT FUNCTION

ICT has more than ever before become a key factor in the teaching and learning at the College. Below is a reflection of college ICT functions and status in the year 2022 as planned and executed by the College system administration office. The ICT functions cut across all the schools, departments, administrative and academic staff and students.

10.1 LAN/Network Service Status Report

- Internet ISP DICTS, at a rate 25000 Mbs.
- The internet is intact from the old building to the new building and MTSIFA through media including; Cisco switches linked by fiber and UTP cable connections hosted in various college units extensions of the LAN.
- The College is experiencing internet loss of about between 1000-1500 Mbs due to inefficiency of the old Cisco (CISCO CATALYST 2950 - 2960) switches unable to exploit the throughput of 25000Mbs provided by the ISP.
- WIFI (MAKAIR AND EDUROAM) supplements internet access, about 20 Access Points of AC Lite (UAP AC Lite), indoor and outdoor of 802.11ac are connected to extend WIFI to Users at Colleges on Bring Your Own Device policy(BYD). Almost the entire

college is covered with Mak-Air or eduroam. Besides MEC 3 and MEC 4 Classes who are shadowed from receiving signals. We hope to resolve the issue through DICTS support by replacing a WIFI signal AP poll which was placed behind the MEC classes but now vandalized for repairs.

LAN/Network service challenges

- Non authorized AP wifi rogue/connectivity created by users without authorization destruct the network during peak hours by flooding it with fake IP addresses and the model of the old cisco switches running especially in old buildings doesn't allow secure configuration.
- Broken internet ports extensions to end-users in class rooms and designated administrative offices require routine replacements and repairs.
- Server room core UPS is down, missing batteries, a replacement of the entire ups is recommended.

Recommendations

- The core fiber switch on level 3 OSI network model for the College LAN is serving beyond lifetime, and it requires to be replaced to avoid long down time when it shuts.

10.2 Information Systems

A consortium of information systems set by the University are deployed linked to Colleges to support the various units in their processes. As the university transcends from isolated information systems to data warehousing, at college level we continue to support all applied information systems and these include;

Webmail.mak.ac.ug; University Collaborative Platform (Emailing System)

- Guiding and troubleshooting issues pertaining staff and student's webmail accounts. In scenarios like; creating, alterations and recovering webmail accounts, the system administration at College is charged with the activities to avoid delays in official works.
- The mail moderation at cedat@lists.mak.ac.ug is crucial, it requires instant responses yet supports system security by avoiding spam mails.

Live Online Collaborations/ Zoom Platform

- Adoption of blended learning and COVID-19 restrictions encourages setting up online platforms like zoom for learner's continuity. It was also handy in other academic activities such as PhD defense activities to encourage more participation by the online audience.
- The office of the Dean school of Engineering facilitated a procurement of a webcam kit to support the online video needs at the College in the meantime as plans for befitting facilities are processed.

The Academic Management Information System (ACMIS).

- Upon authorization from the College Registrars, we enrolled and guided both government and private supposed students for intake 2021/22.
- Supporting updates of old student's data in old information system (ITS) to ACMIS to avoid delays and confusion from learners who might have not learnt of the new developments at Campus.

MUELE.MAK.AC.UG AT CEDAT

- The System administrator has management rights on the e-learning platform (MUELE) and always resolves any form of issues to enable reliable teaching and continuity of learning.

10.3 Report Summary on Status of Computer Lab Items and Projectors

Main-Lab Old building

Items	Status	Capacity/Model	Comments
50 PCS With all accessories available (Mouse, Keyboard, Monitors)	32 Good working Condition	2GB RAM & 466 Hard Disk Space (20). 1GB RAM & 160GB Hard Disk Space (19)	Old Computers, most of the Pcs here can run applications required to support Engineering students.
15 UPS	Not Working	TRIPP-LITE and APCs	Missing UPS batteries/
1 Projector	Not Working	Over Head Dell	Power issues
3 ACs	Working		Preventive Maintenance and servicing is due.

E-Lab Old Building

Items	Status	Capacity/Model	Comments
49 PCs with all accessories available (Mouse, Keyboard, Monitors)	47 Good working Condition	2&4GB RAM & 100-500GB Hard Disk Space. 8GB RAM and 1TB HDD, 10 PCs from ODeL	Received 10 PCS from ODeL courtesy of MasterCard scholars' foundation and are hosted here. In E-lab we are phasing out absolute 10 Pcs to create space for 10 Pcs. Plans for disposing of the absolute PCs are under the procurement office.
20 UPS	Working	TRIPP-LITE and APCs	Missing batteries
Projector	Mobile projector support	Missing/Mobile	Install overhead project
4 ACs	4 working		Serviced with the support of MAPRONANO. Regular servicing should resume

11.0 The CEDAT LIBRARY

The Library serves a very important function in the teaching and learning at the College. In 2022, a number of milestones were realised and these are highlighted below. These contributions were made in the realization of the set objectives of the library.

Strategic Activity	Reporting item
Identified and ordered a list of titles of books and diversified library materials based on the collection development policy.	193 titles ordered, 193 titles ordered, 97 copies of dissertations and research reports from postgraduate students were received. 169 dissertations from undergraduate students received.
Accession & catalogue books and diversified library materials from the procurement process and other sources	44 books accessioned and stamped
Data entry into library databases	196 items entered & modified in Virtua 79 items entered in MakIR 1,389 items entered in MakUD 1,548 students granted submission rights 1,468 Approved submissions
Perform academic services (Conduct Information Literacy, Citation analysis Mentorship (interns), Research and other academic activities)	1,340 students oriented Conducted 2 library tours 134 library users trained
Conduct exhibition, talk shows, think tanks, electronic lists, CAS, notice boards about library products	E-mails sent to lecturers Received visitors from National Council for Higher Education
Stocktaking	600 borrowed books 39 student defaulters 3 students lost & paid for books 290 books identified for repair

Strategic Activity	Reporting item
Identify required and damaged ICT equipment, cost and procure or repair	3 computers received from the Main Library and successfully installed 2 computers not repaired (in touch with the ICT Units to oversee the repairs) 5 data sockets repaired 1 printer & accessories received from the Main Library (1 cartridge for the printer received from the College)
Develop, review and implement library policy framework in conformity with National and Makerere University policy frameworks Review the formulation and functions of library committees in accordance with the existing policies. Library staff serving on professional and administrative committees within and outside Makerere University	Member of the College Board representing CEDAT Library – Member of the Research, Education and Training Committee ULIA Part of the Review Team for the University Records Management Policy
Training library staff to support library functions Restructuring, and filling vacant posts Recognize academic librarians as teaching science in Makerere University	4 library staff trained in using the Online catalogue, MyLOFT, and accessing E-resources 2 Interns trained MakUD & MakIR training by the Digitization Unit (26 th April 2022) Bibliometrics analysis training by KTH (28 th April 2022) Virtua-Maklib post virtua upgrade training (5–9 th September 2022) 1 staff pursuing PhD 1 staff on Master's programme
Allocate workload, appraise staff performance and recommend for promotion	3 library Assistants assigned workload and appraised

Report Summary

1. Compiled list of books to be purchased by Book Bank, 193 titles
2. Payment for 3 lost books made in Book Bank
3. Received 171 copies of dissertations and research reports from postgraduate students & 354 dissertations from undergraduate students
4. Books identified for repair, 290 titles
5. Weeding of the library collection, 3,737 books were withdrawn from the shelves
6. Students/staff lists of defaulters updated 39 (2012-2019)
7. 44 books stamped & spine labeled,
8. 196 records entered, and modified in Virtua & 79 items edited in MakIR & MakUD, 1,389 records
9. Continuous training of 4 CEDAT Library staff in using the online catalogue to find books for students, accessing e-resources, and MyLOFT,
10. Conducted orientation for Undergraduate and Postgraduate students
11. 127 Postgraduate students (School of Built Environment- MSc. Plan A) trained in using E-resources (OPAC, databases, MyLOFT, etc.)
12. 1,582 final students cleared for graduation

Challenges

1. Inadequate library space
2. Faulty data points
3. Irregular cleaning services
4. The broken furniture has not been picked by the Estates Team

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