

## SECTION 11

### REPORT OF THE SENATE TO COUNCIL

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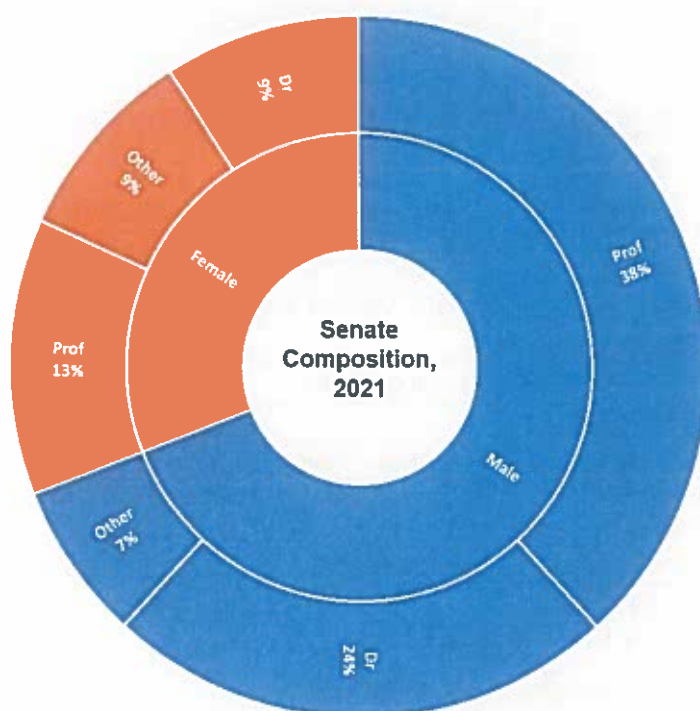
The Senate of the Vaal University of Technology is responsible for academic governance of the University in accordance with the Statute and the Act. Academic governance is understood to comprise the structures, processes and regulatory frameworks through which academic matters are decided and overseen by academic staff, advised and supported by administrative colleagues and students. To this end, the Statute of the University provides that, subject to the Act, the Senate is accountable to the Council for all the academic and research functions within the University and all other functions delegated or assigned to it by the Council. In exercising this mandate, Senate is assisted by its various committees as shown below:

- Senate Executive Committee (SENEX)
- Academic Promotions and Professorial Committee (APPC)
- Teaching and Learning Strategy Committee (TLSC)
- Library and Information Committee (LIC)
- Academic Quality and Standards Committee (AQSC)
- Senate Research and Innovation Committee (SRIC)
- Senate Research Ethics Committee (SREC)
- Academic Planning and Development Committee (APDC)
- Higher Degrees Committee (HDC)
- Deans' Forum
- Academic Appeals & Regulations Committee (AARC)
- Faculty Boards (FBs)

As at 31 December 2021, Senate had the following membership:

Name	Designation	Gender
Alugongo, A (Prof)	HOD – Industrial& Op Man and Mech Eng	Male
Bekker, W.J (Prof)	Electrical Engineering	Male
Brits, HJ (Dr)	Director: Quality Institutional Planning	Male
Chili, M (Dr)	Executive Director: Centre of Academic Development	Male
Chitumwa, CC (Dr)	HOD: Education	Male
Dhurup, R (Prof)	Executive Dean: Management Sciences	Male
Dicks, DA (Prof)	Engineering - Admin	Male
Dicks, E.G (Prof)	Hospitality, Tourism & PR Management	Female
Dlodlo, K (Dr)	HOD: Marketing, Retail business and Sport Management	Female
Dube, K (Prof)	Tourism and Integrated Communication	Male
Grobler, C.J (Dr)	HOD: Health Sciences	Female
Harmse, A (Dr)	Acting HOD: ICT and Software	Female

Isabirye, A (Dr)	HOD: Human Resources	Male
Joubert, P.A (Prof)	Process Control	Male
Kearney, J (Prof)		Female
Kganakga, M.C (Dr)	External Council Member	Female
Kholopane, P.A (Prof)	Ind &Ops Mgt and Mech Eng	Male
Langa, H (Dr)	HOD: Electrical Engineering	Male
Linnington, M (Prof)	DVC: Teaching, Learning and Student Support	Female
Mabuza, BR (Prof)	Executive Dean: Faculty of Applied and Sciences	Male
Mafini, C (Prof)	HOD : Logistics and Supply Chain	Male
Mahlako, B (Ms)	Acting ED: Human Resources	Female
Malatsi, R (Mr)	Technology Transfer and Innovation	Male
Maleho, L (Dr)	HOD: Tourism and Integrated Communication	Male
Maleho, L (Dr)	Executive Dean: Faculty of Human Sciences	Male
Manganye, J (Mr)	IF Rep	Male
Maseko, J (Dr)	HOD: Cost and Management Accounting	Male
Mchunu, S (Dr)	ED: SSS	Male
Mendonidis, P (Prof)	HOD: Metallurgical Engineering	Male
Mgobo, N (Ms)	Chief Financial Officer	Female
Mkhathali, N (Ms)	Acting ED: Library	Female
Modise, S.J (Prof)	HOD: Biotechnology and Chemistry	Male
Mokoena, B.A (Prof)	Acting Research Professor / FRIC Chairperson	Male
Mokoena, T.D (Dr)	Registrar	Male
Moletsane, A (Ms)	Director: Work Integrated Learning	Female
Mtunzi, F.M (Prof)	FACS	Male
Muswaka, L (Prof)	HOD: Legal Sciences	Female
Ndlovu, W (Mr)	Academic Officer	Male
Nelana, S (Dr)	ED: Research	Male
Ngoyi, E.K (Prof)	SECUNDA, FAC Applied Sciences	Female
Ntini, S (Mr)	Deputy President SRC	Male
Ochieng, G (Prof)	HOD: Civil and Building Engineering	Male
Osifo, P (Prof)	Executive Dean: Faculty of Engineering and Technology	Male
Otunniyi, IOT (Prof)	Chemical and Met Eng	Male
Padayachee, T (Prof)	Biotechnology and Chemistry	Female
Pakade, V.E (Prof)	Biotechnology & Chemistry	Male
Radebe, M (Prof)	External Council Member	Male
Rutto, H.L (Prof)	Chemical and Met Eng	Male
Seodigeng T (Dr)	HOD: Chemical and Met Eng	Male
Sikakana, IQ (Dr)	HOD: NDT & Physics and Maths	Male
Tengen, TB (Prof)	HOD: Industrial Engineering and Operations	Male
Van der Bank, C.M (Prof)	Acting ED: RIC1	Female
Van Staden, H (Dr)	HOD: Visual Arts and Design	Female
Zikalala, N.M (Ms)	Deputy Secretary General	Female
Zuva, T (Prof)	ICT	Male



The table and the figure above show that of the 55 members of Senate, 38 were male and 17 were female (69% male and 31% female). Furthermore, the figures show 51% of the members of Senate carried the title of Professor and 33% carried the title of Doctor. Of the members with the title of Professor, only seven were female (13% of the total Senate). 9% of the members of Senate were female with the title of Doctor, compared to 24% who were male and doctors. Therefore, only 21% of Senate members were females with the titles of doctor and/or professor, compared to 62% males. This analysis points to a need for transformation of the Senate through programmes targeting the advancement of female members of the academic staff.

The following table presents the matters considered by Senate in 2020:

Date of Meeting	Matters considered
26 March 2021	Update on the CHE Doctoral Reviews
	University Statute (Amended)
	CAT (Credit Accumulation Transfer) Policy
	Policy on the Recognition for Prior Learning (RPL)
	First Year Experience Policy (FYE)
	Adjunct Appointees and Visiting Scholars Policy
	Teaching and Learning Policy
	Assessment Policy
	Staff Development Policy
	Curriculum Development Policy
	Postgraduate Diploma in Cost and Management Accountancy
	Request of Internal Moderation for Special Exam Scripts

	Phasing out of non-aligned programmes credit accumulation and transfer (CAT)
	Module name changes in accordance with SAQA registrations
	Application for Approval of an Extended Curriculum Programme (Dip. IT)
	Faculty Reports
11 June 2021	Update on the CHE Doctoral Reviews
	Policy on the Recognition for Prior Learning (RPL)
	Adjunct Appointees and Visiting Scholars Policy
	Assessment Policy
	Work Integrated Learning Policy
	Tutoring Policy
	Amendment to Examination Rule
	Extended Programmes (Diploma): Curriculum, Admission and Selection Criteria
	Minimum Entry requirements
	Faculty Reports
06 August 2021 - Extraordinary Senate	CAT & RPL Procedure
	Short Learning Programme Policy
	Community Engagement Policy
	Academic and Professional Staff Promotion Policy
	Adjunct Appointee and Visiting Scholars Policy
	Policy on Research Professors
	Research Data Management Policy
	Research Committee Charters
	Postdoctoral Research Fellowship Policy
	Research Funding Policy
	Grants and Contracts Policy
	Intellectual Property Policy
	Commercialisation Policy
	Mandatory Registration Requirements for all students
	Academic Workload Guidelines
	Senate Charter
	Senex Charter
	Summative/CASS Assessment Practice Note for Special Examination/Assessment
	Teaching and Learning Policy
	Charter for Library and Information Services Committee

	Charter for Higher Degrees Committee
03 September 2021	Nominations/Elections and Composition of the Senate
	Nomination to IF
	Nomination to Senex
	Single Main Registration 2021
	Faculty Reports
19 November 2021	Conferment of the title of Professor, Dr Dan Kgwadi
	2022 Academic and Committee Calendar
	Admission Requirements (FACS)
	Nomenclature Changes to Logistics
	Standardisation of Entrepreneurship 1 Module Credits
	Updating of the Intended Learning Outcomes for the Entrepreneurship Module for the Advanced Diploma in Safety Management
	Conversion of the Research Project Modules into a Year Course
	Request for Changes to the Advanced Diploma in Retail Business Management
	Nomenclature Changes of Accountancy Technology to Accounting Technology
	Request for Changes in the Diploma in Human Resource Management
	Pre-requisite and Progression Rules (FACS)
	Change in the Module Flow of Subjects within the Diploma in Mechanical Engineering
	Nomenclature Changes for the Diploma in Legal Assistance and the Diploma in Labour Law
	Advanced Diploma in Ecotourism Management and Diploma in Ecotourism Management
	Changes to the Diploma and Advanced Diploma in Sports Management
Programme Review (Less than 50% changes)	

### VUT student profile: trend analysis

The following presents an analysis of student profiles in 2020, as compared with previous years.

## Student registrations

The following table shows student headcounts by campus for the years 2017-2021:

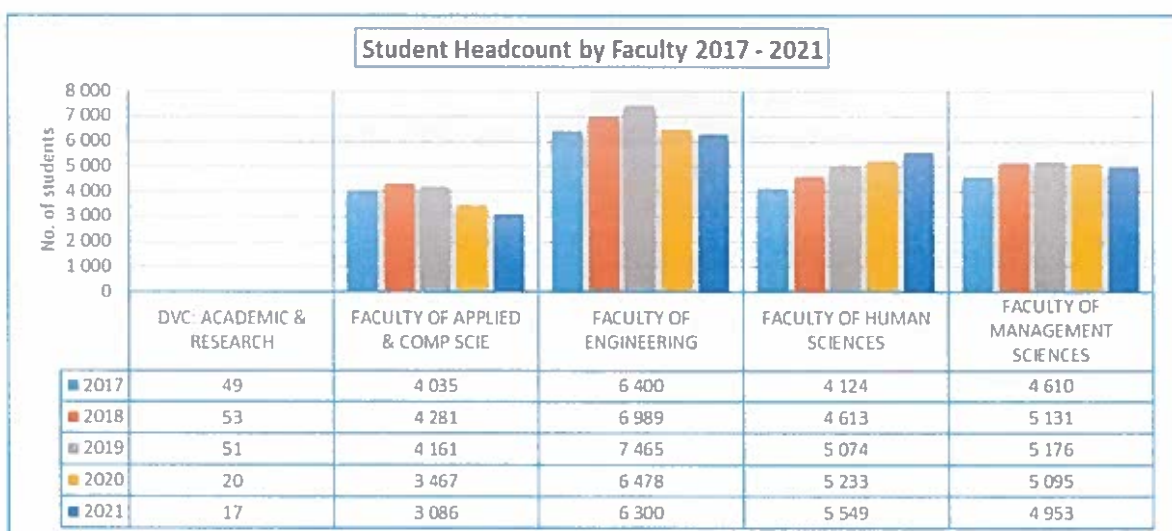
Campus	Calendar Year					Trend
	2017	2018	2019	2020	2021	
EAST RAND DAVEYTON CAMPUS	766	701	787	258	0	
SECUNDA	620	660	726	411	235	
UPINGTON	83	104	92	64	30	
VANDERBIJLPARK	17 749	19 467	20 010	19 189	19 120	
EDUCITY Science Park	0	135	312	371	520	
<b>Total</b>	<b>19 218</b>	<b>21 067</b>	<b>21 927</b>	<b>20 293</b>	<b>19 905</b>	

The table and trend lines show that only the Science Park campus experienced growth in 2021. Each trend line also shows the years in which each campus experienced its peak. The overall figures show a decline in 2021 (19 905 registrations) from a peak of almost 22 000 in 2019. This is accounted for by firstly, lower FTEN registrations than had been targeted and secondly, the systematic closer of sites of delivery (for example the Daveyton site of delivery had zero registrations in 2021 as part of a planned closure of the campus).

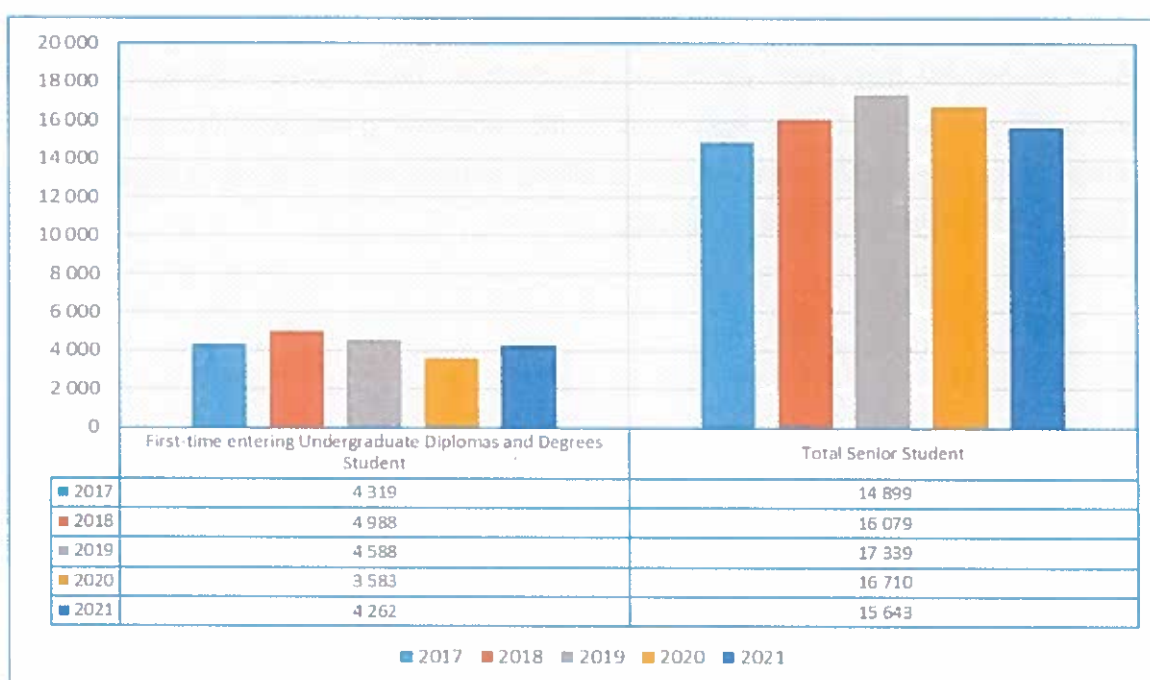
The graph below shows SET and non-SET headcounts for 2019 and 2020:

There has been a decline in SET registrations together with a slight increase in non-SET registrations from 2019 to 2021. The University's mission is to drive SET programmes and enrolments, and there is clearly a need to address this mission-drift. Non-SET registrations were slightly higher than SET registrations in 2021.

The following figure shows student headcounts per faculty.



The figure shows that only the Faculty of Human Sciences experienced an increase in headcounts over the period 2019 to 2021. The annual average growth (AAG) for the Faculty of Applied and Computer Sciences was -6% over the period 2017 until 2021. This means that on average, the faculty experienced a decline per annum of 6%. The AAG for Engineering and Technology was 0%, for Human Sciences it was 8% and for Management Sciences it was 2%. This therefore means that over this period, Human Sciences experienced the highest growth annually on average. The overall AAG was 1%.




















The above figure compares FTEN undergraduate students to senior student headcounts. The figure shows a marked decline in FTEN enrolments from 2018 with a slight increase in 2021. In 2021 there was also a decline in returning students, following several years in which the number of returning students had increased significantly and started to decrease in 2020. Many factors accounted for this situation, especially the uncertainties brought about by the climate of the University which precipitated it being placed under administration. Other factors are externalities experienced by the sector and not only VUT. The University is working hard to address this deficit in headcount enrolments.



Entrance Category Description	Calendar Year					Growth: 17 - 21 %	Change: 20 - 21 %
	2017	2018	2019	2020	2021		
Entering student	3 674	2 243	2 122	1 279	1 207	-24,29%	-5,63%
First-time entering student	4 883	5 604	5 244	4 105	4 809	-0,38%	17,15%
Non-entering student	10 523	13 070	14 459	14 877	13 800	7,01%	-7,24%
Transfer student	138	150	102	32	89	-10,39%	178,13%
<b>Total</b>	<b>19 218</b>	<b>21 067</b>	<b>21 927</b>	<b>20 293</b>	<b>19 905</b>	<b>0,88%</b>	<b>-1,91%</b>

The table above shows the different headcounts per various entering categories: entering students, i.e. students who are switching qualifications, first time entering (FTEN) students, i.e. students who are enrolling at VUT for the first time, non-entering, i.e. senior or returning students, and transfer, i.e. students transferring from another institution. The table shows that all but the non-entering category experienced a decline in headcount enrolments on average. The growth rate for FTEN was -0.38% and for the non-entering headcount it was 7.01%. The number of transferring students has been declining sharply since 2018, with a slight growth in 2021 due to the closure of sites of delivery.



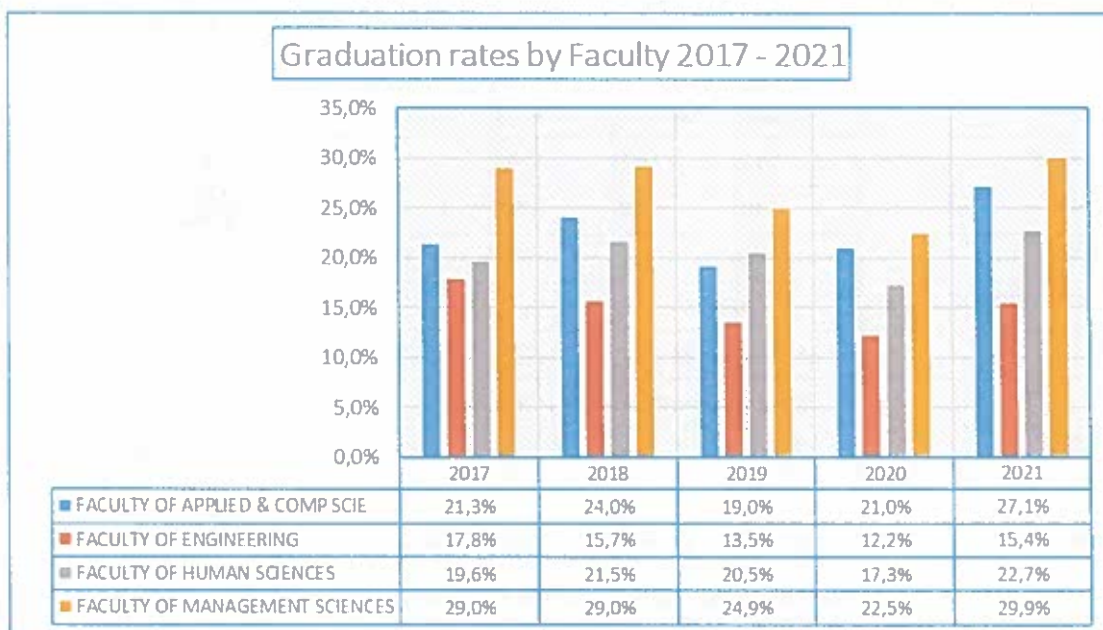
Headcount per Demographic and CESM Category						
Transformation Items	2017	2018	2019	2020	2021	
<b>Student Headcount by Nationality</b>						
South African	17 652	19 691	20 689	19 251	19 101	
International Students	1 566	1 376	1 238	1 042	804	
<b>Total</b>	<b>19 218</b>	<b>21 067</b>	<b>21 927</b>	<b>20 293</b>	<b>19 905</b>	
<b>Student Headcount by Race</b>						
African	18 823	20 724	21 623	20 044	19 717	
Coloured	110	102	100	84	71	
Indian	40	40	37	28	18	
White	245	201	164	135	96	
No Information	0	0	3	2	3	
<b>Total</b>	<b>19 218</b>	<b>21 067</b>	<b>21 927</b>	<b>20 293</b>	<b>19 905</b>	
<b>Student Headcount by Gender</b>						
Female	8 643	9 541	10 224	9 646	9 764	
Male	10 575	11 526	11 703	10 647	10 141	
<b>Total</b>	<b>19 218</b>	<b>21 067</b>	<b>21 927</b>	<b>20 293</b>	<b>19 905</b>	
<b>Student Headcount by CESM Category</b>						
Business/management	5 533	6 102	6 508	6 416	6 385	
Education	219	368	554	617	773	
Other humanities	3 055	3 345	3 514	3 564	3 633	
Science, engineering, technology	10 411	11 252	11 351	9 696	9 114	
<b>Total</b>	<b>19 218</b>	<b>21 067</b>	<b>21 927</b>	<b>20 293</b>	<b>19 905</b>	

The table above and the trend lines show headcount enrolments per category. The table shows a sharp decline in the number of international students over the years, from 1566 in 2017 to 804 in 2021. This component represented only 4.04% of the total enrolments in 2021. The table further shows a preponderance of African students. While this component of the student body remained fairly stable during the period under review, there was a marked decline in the number of students from other races, particularly of Coloured and White students. The ratio between male and female students remained fairly stable over the period, with male students in the majority. Finally, the table also shows that Education and other Human Sciences experienced positive growth over this period, whilst Business/Management experienced a slight fall in headcounts especially in 2021. Science, Engineering and Technology experienced the sharpest decline, especially in 2021, ascribable primarily to lower

enrolments in the Faculty of Applied and Computer Sciences. The University will work towards addressing these challenges regarding enrolments going forward.

## Graduations

This section shows graduation figures for the University over the period 2016 to 2021.



The figure above shows the graduation rates for the various faculties. The figure shows that the Faculty of Management Sciences has consistently had the highest graduation rate over the period 2017 to 2021, followed by Applied and Computer Sciences. The table below also shows the actual graduation numbers per faculty. It shows that the Faculty of Management Sciences graduated more students per year, including in 2021, than other faculties, followed by the Faculty of Engineering and Technology, except in 2020 and 2021 (when the Faculty of Human Sciences came in second). The table also shows a sharp decline in graduations overall for the year 2020, with a sharp increase in 2021. The 2020 numbers were ascribable to the outbreak of Covid-19 and the concomitant lockdowns which led to delayed completion by a number of students.

Faculty	Academic Year				
	2017	2018	2019	2020	2021
FACULTY OF APPLIED & COMP SCIE	859	1 026	792	727	835
FACULTY OF ENGINEERING	1 141	1 094	1 010	790	968
FACULTY OF HUMAN SCIENCES	807	994	1 039	904	1 258
FACULTY OF MANAGEMENT SCIENCES	1 336	1 490	1 288	1 145	1 483
<b>Total</b>	<b>4 143</b>	<b>4 604</b>	<b>4 129</b>	<b>3 566</b>	<b>4 544</b>

The following table presents graduation rates by CESM category and different qualification types:

Student Graduation Rates (2017 - 2021)						
	2017	2018	2019	2020	2021	Trend
<b>CESM category description</b>						
Business/management	1 570	1 724	1 502	1 276	1 679	
Education	116	139	206	122	236	
Other humanities	499	636	646	685	868	
Science, engineering, technology	1 958	2 105	1 775	1 483	1 761	
<b>Total</b>	<b>4 143</b>	<b>4 604</b>	<b>4 129</b>	<b>3 566</b>	<b>4 544</b>	
<b>Qualification Type - Post under graduate</b>						
Post Graduate	178	209	274	188	335	
Under Graduate	3 965	4 395	3 855	3 378	4 209	
<b>Total</b>	<b>4 143</b>	<b>4 604</b>	<b>4 129</b>	<b>3 566</b>	<b>4 544</b>	
<b>Qualification type</b>						
Degrees	1 181	1 473	1 431	753	400	
Diplomas and Certificates	2 801	2 936	2 426	2 647	3 809	
Doctoral	5	10	9	19	13	
Masters	40	46	57	44	60	
Other Postgraduate	116	139	206	125	262	
<b>Total</b>	<b>4 143</b>	<b>4 604</b>	<b>4 129</b>	<b>3 588</b>	<b>4 544</b>	

The figure shows that the highest graduation rates were experienced in Business/Management and Education. For both categories, the rates slowed down in 2019 and 2020 and increased slightly in 2021. SET graduations were lowest in 2019 and 2020, with a slight recovery in 2021. Postgraduate graduation rates were consistently higher than undergraduate rates over this period, with both categories experiencing a decline in 2019 and 2020, and an increase in 2021. Graduation rates in postgraduate qualifications other than Master's and Doctoral degrees (i.e. Advanced Diplomas and Postgraduate Diplomas) were the highest, including in 2021.

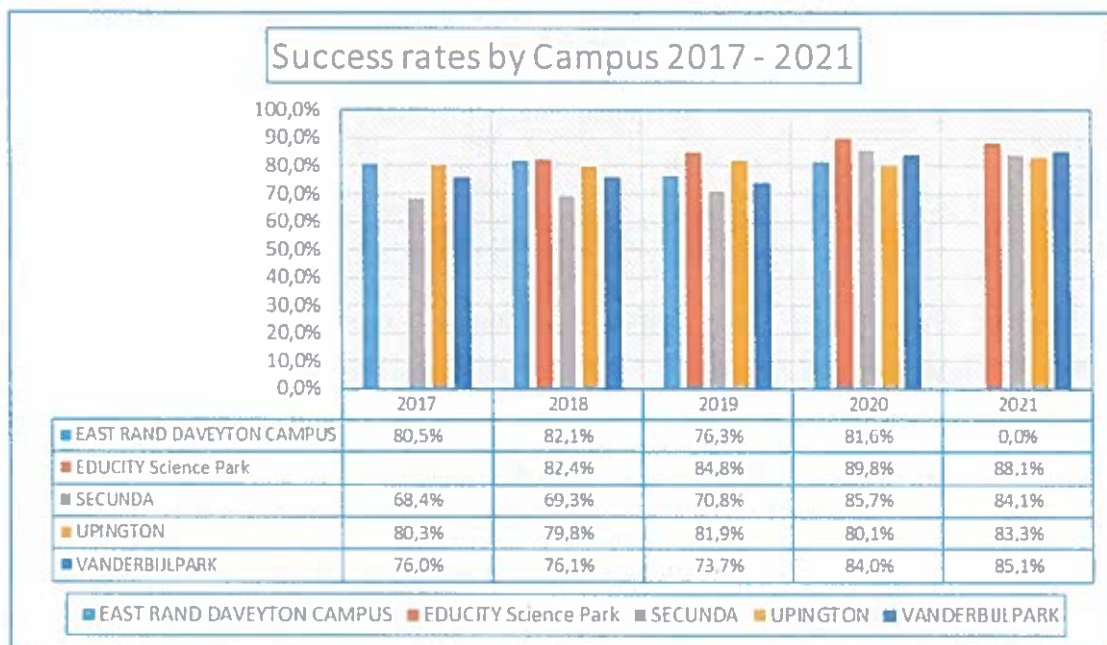
Graduation Numbers by Gender and Race						
	2017	2018	2019	2020	2021	Trend
<b>Gender description</b>						
Female	2 125	2 448	2 249	1908	2602	
Male	2 018	2 156	1 880	1658	1942	
<b>Total</b>	<b>4 143</b>	<b>4 604</b>	<b>4 129</b>	<b>3 566</b>	<b>4 544</b>	
<b>Race description</b>						
African	4 056	4 513	4 069	3 508	4 491	
Coloured	28	28	19	12	16	
Indian	7	10	6	9	5	
White	52	53	35	36	30	
No Information	0	0	0	1	2	
<b>Total</b>	<b>4 143</b>	<b>4 604</b>	<b>4 129</b>	<b>3 566</b>	<b>4 544</b>	

The table above shows graduation numbers by gender and race. It shows that the number of female students graduating in each year exceeded the number of their male counterparts,

even though registration figures, as discussed above, show higher male headcount enrolments than female. The ratio between male and female graduates remained relatively stable over the years. There was understandably a much higher number of African graduates across all the years than of other races. The picture is concomitant with the average annual growth in graduations for the various race groups (White: -11%, Indian: 2%, Coloured: -9% and African: 4%). The Indian and African AAG showed a positive growth. Others show a decline, especially for Coloureds and Whites.

### Success rates

The following figure shows success rates by campus:



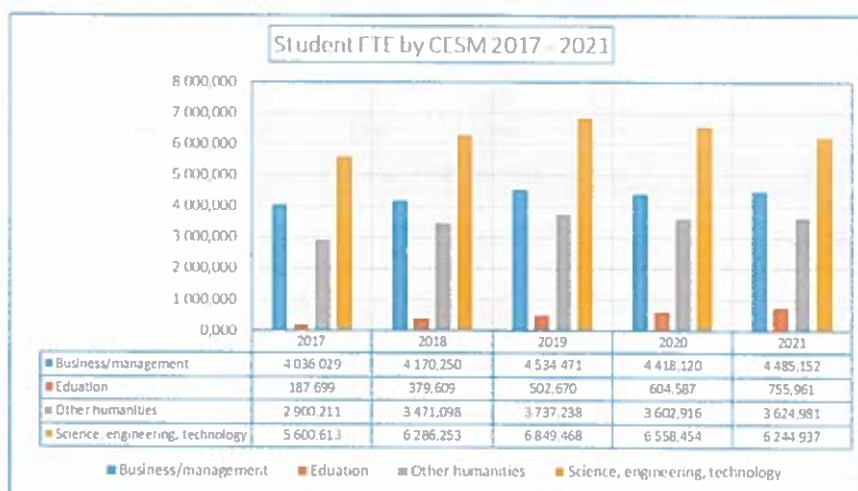
The figure shows that success rates for all campuses were high since in 2020, despite the outbreak of the Covid-19 pandemic and the national lockdowns that ensued. All campuses achieved success rates higher than 80% in 2021, except for Ekurhuleni which was closed by 2021. Vanderbijlpark and Uppington have consistently achieved success rates higher than 70% since 2016. The Secunda campus has achieved only moderate success rates over this period.

Faculty success rates will be shown in the faculty reports below. The following table shows success rates by nationality, gender and race.

Success Rates by Nationality, Gender and Race (2017 - 2021)					
	2017	2018	2019	2020	2021
<b>Success Rates by Nationality</b>					
South African	76,4%	76,5%	74,1%	84,0%	85,2%
International	71,0%	72,4%	71,2%	84,4%	83,7%
<b>Total</b>	<b>76,0%</b>	<b>76,2%</b>	<b>73,9%</b>	<b>84,0%</b>	<b>85,1%</b>
<b>Success Rates by Gender</b>					
Female	80,6%	81,6%	79,6%	89,4%	89,4%
Male	71,9%	71,6%	68,6%	79,1%	80,8%
<b>Total</b>	<b>76,0%</b>	<b>76,2%</b>	<b>73,9%</b>	<b>84,1%</b>	<b>85,1%</b>
<b>Success Rates by Race</b>					
African	76,1%	76,3%	73,9%	84,2%	85,2%
Coloured	77,2%	77,3%	79,7%	82,0%	79,0%
Indian	57,9%	76,3%	83,6%	95,5%	73,8%
White	64,2%	67,6%	71,9%	74,9%	76,4%
No Information			9,2%	85,1%	123,3%
<b>Total</b>	<b>76,0%</b>	<b>76,2%</b>	<b>73,9%</b>	<b>84,0%</b>	<b>85,1%</b>

The figure shows that South African nationals have performed better than their international counterparts over the years 2017 to 2021. In 2021 the success rate for South African students was 85.2%, which was the highest in any one year. For international students it was 83.7, which was slightly lower than in 2020. Female success rates were higher than male success rate for all years including 2021. The success rates for the Coloured category has consistently been the highest, except in 2021 when the highest rate was for African category.

### Student FTEs





The figure above shows student FTE's per CESM category. The figure records highest FTEs in SET across all years, with a peak in 2019 at 6849. 2020 and 2021 saw a declining trend from the 2019 peak at 6558 and 6244 for SET respectively. The second highest FTEs were in the Business/Management category. The Education category shows consistent growth in FTEs throughout the period.

### Concluding remarks on the 2020 student data

Our very satisfactory degree credit success rate was supported through our achievement against our strategic objectives, specifically through the increase in technology enabled learning in 2020 and 2021, as well as improved staff development. An area of concern remains the placement of WIL students, though this was negatively affected in 2020 and 2021 by the COVID-19 pandemic. Finally, the negative deviation on our enrolment target remains a concern and is being addressed through various strategies.

### Academic Staff Analysis

The figure below shows staff headcount for instructional and research staff on permanent and temporary contracts for the years 2016 to 2020.

VUT Permanent and Temporary Academic Staff Headcount by Race, Gender and Rank 2017 - 2021						Trend
	2017	2018	2019	2020	2021	
<b>Race</b>						
African	617	639	681	647	572	
Coloured	7	8	7	7	7	
Indian	25	30	26	23	29	
White	251	251	245	224	209	
No Information				1	4	
<b>Total</b>	<b>900</b>	<b>928</b>	<b>959</b>	<b>902</b>	<b>821</b>	
<b>Gender</b>						
Female	352	373	408	371	333	
Male	548	555	551	531	488	
<b>Total</b>	<b>900</b>	<b>928</b>	<b>959</b>	<b>902</b>	<b>821</b>	
<b>Rank Of Staff Member</b>						
Associate director					0	
Associate professor	18	18	21	19	20	
Director					0	
Junior lecturer	225	186	219	188	93	
Lecturer	534	603	599	573	592	
Other than instruc /resh. professionals					0	
Professor	7	7	6	6	13	
Senior lecturer	116	114	114	116	103	
<b>Total</b>	<b>900</b>	<b>928</b>	<b>959</b>	<b>902</b>	<b>821</b>	

The figure shows that overall, the number of academic staff has declined in 2021. It grew from 900 in 2017 to 959 in 2019, and then declined to 821 in 2021. This was in part due to the freezing of numerous vacant posts, to ensure financial sustainability of the institution. The figure also shows that there was a majority of African and White academic staff over the period 2017 to 2021. There have been more male than female academic staff, and the ratio between them has remained relatively stable. An analysis in terms of rank will be presented in greater depth in the faculty reports. The figure below shows the same table but only for permanent academic staff.

VUT Permanent Academic Staff Headcount by Gender, Race and Rank, 2017 - 2021						
	2017	2018	2019	2020	2021	Rank
<b>By Gender</b>						
Female	177	173	170	175	176	
Male	220	212	204	207	189	
Total	397	385	374	382	365	
<b>By Race</b>						
African	243	237	230	243	235	
Coloured	5	4	5	5	5	
Indian	16	14	14	13	11	
White	133	130	125	121	114	
Total	397	385	374	382	365	
<b>By Rank</b>						
Associate director				0	0	
Associate professor	17	18	21	19	19	
Director				0	0	
Junior lecturer	12	13	14	13	12	
Lecturer	246	235	221	230	222	
Other than instruc./resh. professionals				0	0	
Professor	7	7	6	6	13	
Senior lecturer	115	112	112	114	99	
Total	397	385	374	382	365	

A matter of concern is the serious imbalance in terms of seniority of permanent academic staff, with the very significant majority of academic staff appointed at lecturer level (230 in 2020, decreasing to 222 in 2021), and 99 staff at senior lecturer level. At senior ranks, there are only 19 associate professors, and 13 full professors. There has been little change, if not decline, in these senior figures since 2017, except in the category of professor, which showed an increase in 2021. This is a matter which will receive close attention over the coming years. A revised Academic Promotions Policy has been approved, and a number of initiatives such as participation in the Thuthuka programme and use of UCDF funding (as reported in the Section on Transformation) to fast-track completion of higher degrees, are in place.



## **FACULTY REPORTS TO SENATE**

**BRIEF OVERVIEW:** The year 2021 was a year of meeting the challenge of the on-going pandemic. The academic year of 2020 was only completed in February 2021, while the academic year of 2021 started on the first of March, 2021. The University followed the T&L model of emergency remote teaching, as well as 'mask to mask' practical class delivery. Lessons learnt from 2020 were useful in assisting us to successfully complete 2021, improving our T&L quality and delivery. The presence of students in residence, even if not in class gave us assurance of the ability of students to connect.

The roll-out of WIFI remains a concern, and although students are given data bundles for teaching and learning, connectivity still remains a challenge. However, the success of the T&L portfolio is reflected in our results, as depicted by the faculties. The success is also a direct result of the support received from the centre for academic development (CAD) and the Directorate of Student Support Services (SSS). Their challenges and successes are detailed.

Despite the pandemic our research productivity continues to improve and the promotion of staff across all faculties reflects the hard work invested in research and post graduate matters.

Restructuring of CAD saw the return of e-skills and SLP to the portfolio, and the delivery of SLP's will be visible in 2022 as a result. The expansion of Vutela to include student analytics is a major milestone and will yield visible improvements into the future.

Community collaborations took a knock in 2020, but did bounce back in 2021, with room for further growth. 2021 marked many new things and as a portfolio we reviewed many policies and guidelines for T&L into the future.

### **Faculty of Applied & Computer Sciences**

#### **1 Nature of the Faculty of Applied & Computer Sciences**

The year 2021 saw unexpected surprises and changes to the Faculty of Applied and Computer Sciences (FACS), University, and the country. This was due to the COVID-19 pandemic which came upon our country unexpectedly. The way we communicated with, taught, and assessed students was deeply affected and genuine change was inevitable. This came with the anxiety, confusion, and frustration to be experienced by both students and teaching staff.

### 1.1 Departments in the Faculty

The Faculty comprises four (4) comprehensive new Departments. These new Departments are, (a) Biotechnology & Chemistry, (b) Health Sciences, (c) Information & Communication Technology, and (d) Mathematics, NDT & Physics.

### 1.2 Composition and size of student body

Table 1 shows the actual enrolment against the enrolment target for 2021 (77.5%).

**Table 1: Actual enrolment against enrolment target**

	Diploma	Advanced Diploma	Postgraduate Diploma	Masters Degree	Doctoral Degree	Total
Biotechnology	459	20	4	37	12	532
Chemistry	471	65	7	52	20	615
Health Sciences	418	63	11	-	-	492
ICT	1357	76	19	29	11	1492
NDT & Physics	32	1	-	-	-	33
<b>Actual enrolment:</b>	<b>2737</b>	<b>225</b>	<b>41</b>	<b>118</b>	<b>43</b>	<b>3164</b>
<b>Enrolment Target:</b>	<b>3468</b>	<b>339</b>	<b>165</b>	<b>87</b>	<b>37</b>	<b>4096</b>

### 1.3 Work Integrated Learning

Work integrated learning allows students to work in genuine industries and develop their sense and awareness of workplace culture. This is supported in our curricula through class consulting projects, simulations, Work Integrated Learning, and mentor programmes. All the programmes offered in the Faculty have advisory board committees consisting of industry stakeholder members.

Table 2 below shows the percentage of students who completed the course work and have been placed in industry.

**Table 2: Students placed in Industry for the WIL**

Biomedical Technology	Biotechnology	Chemistry	Non-destructive Testing
100%	95%	60%	68%

Table 2 clearly shows that more work should be done to ensure that more students are placed for WIL in industry for Chemistry and Non-destructive testing.

#### **1.4 Faculty Owned Entities**

The Faculty is proud to have three (3) Faculty Owned Entities, namely, AMBIO environmental, Dihlare Remedy (PTY) Ltd and Centre for Chemical & Biotechnology (CCBT). Dihlare Remedy is a company established between the Vaal University of Technology (VUT) and Industrial Development Corporation (IDC).

- a) An interview on SABC 2 based on cannabis economic potential has been conducted by Prof Fanyana Mtunzi.
- b) A talk on the value of indigenous medicine has been conducted by Dr Tozama.
- c) CCBT has facilitated training on 22 Traditional Health Practitioners (THPs) through the Maponya Ambulances and eNetHealth.

## **2 Quality Teaching and Learning**

Students and lecturers had to adjust to teaching and learning via blended teaching and learning. The Faculty departments were able to set up their own tracking systems to be in touch with students.

### **2.1 Significant Developments**

The following significant modes of delivery were implemented as follows:

#### **a. Online Registration**

The use of an online registration platform to facilitate the registration of students was fully implemented. All students managed to register through online.

#### **b. Blended Teaching and Learning**

The uptake of Blended Learning in the Faculty was accelerated by the lockdown measures put in place to prevent the spread of COVID-19 pandemic. All theoretical subjects were taught and assessed via VUTela and IBM, while for practicals requiring a laboratory component, the use of a blended strategy that included face-to-face practical sessions facilitated via online teaching and tutorials was implemented. All staff members continuously explored additional functionalities in the Learning Management System (LMS) such as Group tool and group assignments, for example Blackboard, collaborate for presentations, Microsoft Teams integration with VUTela. During the second half of the year, lecturers created video content on different platforms such as EON, Baudicam and Screencastify.

**c. The importance of Faculty Research Ethics Committee (FREC)**

The Faculty Research Ethics Committee ensures that ethical standards and scientific merit of research involving human subjects are met. This committee further ensures that research proposals are treated with respect and consideration and that the right of the participants are protected.

**2.2 Awards and Achievements**

- a) There were six hundred graduates, where three hundred and nine (309) were for Diploma, three hundred and ten (310) for Advanced Diploma/Bachelor of Technology, twenty (20) Masters degrees and eight (8) Doctoral studies.
- b) A degree credit success rate of 86.4% obtained and the success rate of 82% were obtained.
- c) The aggregate staff performance was 3 (5 – point index).
- d) The Faculty signed Memorandum of Understanding (MoUs) with Kogakuin University (Japan), and developed and MOU with National University of Lesotho 2021.
- e) An interview on SABC 2 based on mRNA was conducted by Dr C Ssemakalu.
- f) A short course on OMICs was delivered by Dr Feto.
- g) Two department-based services and community engagement programmes on wetland restoration have been initiated.
- h) Collaboration talks have been concluded with SASOL, Mintek, Sefako Makgato Medical University, iThemba Labs in 2021.
- i) A collaboration with Suncrest High School was established. Initial meetings were held, and the ICT department assisted at the schools's prize giving ceremony
- j) The late Dr Makhalemele received an acknowledgement from Ikhwezilokusa at De Deur in January 2021, for donating 20 pairs of shoes.
- k) The Faculty had eight (8) first year top achievers, where two (2) are for the Analytical Chemistry Diploma, two (2) for Biotechnology diploma and four (4) for Information Technology.

**3 Research Productivity**

The Faculty increased the research productivity as follows:

- a) The Faculty had three (3) research focus areas, and these are (1) Water & Remediation, (2) Medical, Health & Wellbeing and (3) Information Systems & Smart Technology Applications.

- b) The Faculty had forty-nine (49) publications and book chapters for the 2021 academic year. Some staff members attended and presented their research paper at virtual conferences.

The Faculty and Research Directorate provided support through UCDP grants. The Faculty had eight (8) female staff members and one (1) male who graduated with PhD and two (2) females and one (1) male who graduated with Masters degrees. The Faculty had two (2) PhD and twenty (20) Masters/MTech students who graduated. Furthermore, fourteen (14) staff members have registered for Masters' degrees and (17) for doctoral studies.

Tables 3a and 3b show the number of Professors available in the Faculty where four (4) staff members are male Full Professors, and one (1) staff member is a female Full Professor, while six (6) staff members are Associate Professors.

Table 3a: Number of Full Professors in the Faculty

<b>Race</b>	<b>Female</b>	<b>Male</b>	<b>Total</b>
African	0	3	3
Coloured	0	0	0
Indian	1	1	2
White	0	0	0
<b>Total</b>	<b>1</b>	<b>4</b>	<b>5</b>

Table 3b: Number of Associate Professors in the Faculty

<b>Race</b>	<b>Female</b>	<b>Male</b>	<b>Total</b>
African	1	3	4
Coloured	1	0	1
Indian	0	0	0
White	1	0	1
<b>Total</b>	<b>3</b>	<b>3</b>	<b>6</b>

- c) A total of one hundred and eighteen (118) masters and forty-three (43) doctoral students enrolled in 2021. The Faculty hosted five (5) Post-Doctoral Research Fellows.
- d) The Faculty raised an estimated amount of R 4.4 million towards research in the form of grants from NRF, African Research Excellence Fund, Technology Innovation Agency (TIA) and SASOL, etc. The Faculty also received R109 900 from other sources.
- e) Workshops, consultations and presentations between students and supervisors were conducted via virtual meeting platforms. The Departments also communicated with

researchers via virtual meeting platforms. Practicals for research purposes were conducted in the research laboratories.

#### 4 Access to financial aid

Many of the Faculty students were financially assisted by National Student Financial Aid Scheme (NSFAS), companies, industry and the banking sector.

#### 5 Challenges Experienced and addressed

The Nursing students had challenges due to the lack of transport to conduct clinical practice at various healthcare facilities, thus the programme was extended until March 2022. The Department of Higher Education and Training was approached to grant virement on the Clinical Training Grant allocated funding to hire a bus driver. The Faculty is grateful that the request was approved.

Additional procurement difficulties complicated the situation in the research laboratories as replacement consumables could not be purchased. A more efficient procurement system and an automatic switch for the generator has been suggested and earmarked to be carried out in 2022.

#### 6 Limitations on access to certain courses

There is a shortage of supervisors and promoters in the Faculty, as well as research laboratories and auditoriums. The Health Professions Council of South Africa (HPCSA) and South African Nursing Council (SANC) determine the intake of students into BHSc: MLS and Bachelor of Nursing and thus the numbers of students in these programmes are lower as compared to other programmes in the Faculty.

#### 7 Levels of academic progress in different disciplines and levels of study

The pass and success rates for the Faculty are reflected on table 2 below:

**Table 4: Pass and Success rates**

	2019		2020		2021	
	Pass Rates	Success Rates	Pass Rates	Success Rates	Pass Rates	Success Rates
<b>Semester 1 Total:</b>	<b>88,28%</b>	<b>67,71%</b>	<b>85,78%</b>	<b>81,61%</b>	<b>87,60%</b>	<b>82,60%</b>
Ekurhuleni	88,67%	68,91%	76,52%	74,66%		
Secunda	85,12%	56,78%	91,23%	85,81%	84,90%	58,50%
Upington	96,00%	90,57%	90,24%	67,27%	100%	72,30%
Vanderbijlpark	88,31%	67,91%	86,18%	82,01%	87,60%	82,70%

<b>Semester 2 Total:</b>	<b>86,97%</b>	<b>69,27%</b>	<b>87,57%</b>	<b>80,62%</b>	<b>86,09%</b>	<b>82,40%</b>
Ekurhuleni	88,20%	80,57%	80,08%	75,62%		
Secunda	91,96%	73,46%	84,85%	61,06%	83,90%	83,90%
Upington	95,10%	84,47%	93,41%	55,19%	90,90%	20,00%
Vanderbijlpark	86,70%	68,39%	88,01%	81,47%	86,00%	82,60%
<b>Grand Total:</b>	<b>87,67%</b>	<b>68,43%</b>	<b>86,69%</b>	<b>81,10%</b>	<b>86,90%</b>	<b>82,10%</b>

## FACULTY OF ENGINEERING AND TECHNOLOGY

### BRIEF BACKGROUND

The FET is one of the largest faculties in the university with a student population of 6302 in 2021.

Restructuring of the eight departments in the faculty was completed in 2021 with the mergers of eight departments into four departments, namely:

- Department of Chemical and Metallurgical Engineering
- Department of Civil Engineering
- Department of Electrical Engineering which consist of: Electronic Engineering, Power Engineering, Process Control and Computer Systems Engineering
- Department of Industrial Engineering & Operations Management and Mechanical Engineering
- Secunda: Chemical and Metallurgical Engineering and Electrical Engineering

The restructuring was done in such a manner that the merged departments have similar focus and contents that will allow the staff and students to still belong to the discipline of choice.

### FACULTY ENROLMENT NUMBERS

A total headcount of 1216 first years enrolled in January 2021. The faculty therefore did not reach the planned quotas of new first year intake of approximately 1500 students as envisaged.

In 2021 the Advanced Diploma target enrolment percentage increased to 57% (compared to 35% in 2020), with a total headcount of 587 Advanced Diploma students.

Postgraduate Diplomas were implemented at the start of January 2021, and a total of 32 students registered for various PGDs within the faculty (a target percentage of 13%).



The enrolments for Masters and Doctoral degrees have continue to grow in the faculty since previous years. A total of 151 students enrolled for Masters degrees and 38 students for Doctoral studies. A total of 730 students graduated in 2021.

## TEACHING & LEARNING STRATEGY

Due to the Covid pandemic, all modules were conducted online, with practical sessions conducted on campus. The majority of CASS assessments were conducted online on Vutela (Blackboard).

Some students faced challenges with data and load shedding during the course of the year. The online class attendance was on average, but the recordings of the classes made it possible for students to follow the classes after hours or at their own convenience.

Old diploma students are being assisted to complete remainder modules and these qualifications are phasing out. Where applicable, they were given special examinations to expedite the process. All BTech programmes are being phased out and only a few students registered for final year subjects.

DHET has approved the offering of extended/foundation programmes for the 2021 academic year onwards within the FET. The purpose of the extended programme is to provide a proper foundation to first year students that will enable them to cope with their academic workload. The programme was designed to improve success of the new intake as the majority of the students are from historically disadvantaged societies that do not have standard educational systems. Due to the high dropout rate among these students (first year) in engineering, it was proper to come up with a curriculum system that will allow qualifying students to successfully progress through their first year of studies. The programmes were designed with fully foundational modules with few augmented first year regular modules. Due to various factors beyond the faculty's control, the extended programmes could not be offered in the 2021 academic year.

In August 2021, the entrance criteria for the Faculty of Engineering & Technology was revised and it was presented at the Academic Planning & Development Committee for approval.

The credit degree success for 2020 and 2021 remain almost the same with 77% and 76% respectively.

## **SIGNIFICANT BREAKTHROUGHS**

Some significant breakthroughs were experienced in the faculty despite the ongoing Covid restrictions that posed a threat to the 2021 academic year.

In the department of Chemical and Metallurgical Engineering, Dr H. Chiririwa has received R510 000 research funding from CHIETA (CHIETA 2020/2021 CYCLE 1 Amended Advert of the Discretionary Grant funding (Industry-University Partnership) – Production of Nanosilica from Waste Glass - Approved R510 000.00). The Post Graduate Diploma (Chemical) was offered for the first time in 2021.

The Civil Engineering department successfully advertised, shortlisted and held interviews for two NESP positions for Structural Engineering and Transportation-Railway Engineering. However, due to technicalities in the application processes, the structural engineering hiring process was deemed to have breached to DHET guidelines and was thus to be re-advertised. The successful candidate for the Transportation-Railway Engineering position declined to take up the offer. This position is also due to re-advertisement. Mr. Felix Onyango was selected as one of the champions of the EON-XR pilot project. EON Reality is a global leader in Augmented and Virtual Reality-based knowledge and skills transfer for industry and education. The platform with the support of the office of the DVC TL&SSS will be used to enhance teaching and learning in the new age of digitization (4IR). EON-XR is a massive step forward for a world in which remote learning is more important than ever.

Other successful breakthroughs in the faculty included the successful commencement and offering of the various Postgraduate Diplomas in various departments within the faculty.

## **COMMUNITY ENGAGEMENT**

On 6<sup>th</sup> August 2021, the Chemical and Metallurgical Engineering Department handed 23 pairs of shoes and 23 pairs of socks to the needy learners at Vuyo Primary School.

Within the Electrical Engineering discipline Dr Mathaba has been involved with local schools in assisting with Maths and Science skills.

The IEOMME department initiated the following projects in 2021 from 2020 engagements:

1. To maximize (process & supply for) metal and plastic recycling in the Vaal area.

2. Community development through the application of modelling and simulation. The objective of this project is to assist and show medium-sized companies or local shops the power of modelling and simulation in making effective decisions.

## **RELATIONSHIP WITH INDUSTRY**

The faculty relationship with industries has grown from strength to strength through a well-organized Advisory Committee Meetings that took place last year with almost 60 members present at the November 2021 meeting.

The department of Civil Engineering has strong collaborations with Lafarge South Africa, Department of Water and Sanitation, CSIR; and Water Research Commission. Through VUT Telkom Centre of Excellence and Research Centre for Alternative Energy, strong collaboration is ongoing with Telkom, Eskom and TFMC. The total research funding for these centers are sponsored by these companies.

The IEOM Department has collaborated with two companies (CBI Electric/African Cables and Samancor) to upskill some of their production personnel by training them in the National Diploma in Operations Management. The Department has a Memorandum of Understanding with TTI that is in the final stages of approval. Several Industrial Engineering students will receive intensive training in the processes involved in the manufacturing of shoes. This will follow three months practical training in the COFE (Centre of Footwear Entrepreneurship) at the Science Park, and after that, they will receive one (1) month hands-on training in a production shoe factory in Durban (Labora Shoes). Hereafter, they should be highly employable in the shoe industry in the fields of quality control, supervision, middle management, productivity managers and will be typically applying the following techniques: work study, facility layout and line balancing, costing, quality control, and quality assurance etcetera. The main objective of the COFE is to incorporate the program into Industrial Engineering allowing students to specialize. The department has ongoing relationships with Arcelor-Mittal and RHI who provide student internships, bursaries, BTech project support and/or moderation assistance. Companies that have provided WIL training to our students, to mention a few include: LTM Mulondo Holdings (Pty) Ltd; Duvha Foundry; Hulamin Limited; Nkomati; Anglo American Thermal Coal; Scaw Metals Group; Scaw McKinnon Chain; Bokoni Platinum Mine; Western Chrome Mines; Mineral Operations Executive (Pty) Ltd; Zinchem; Glencore (Xstrata Coal); Thusang Metco; MINTEK; Minopex; Sasol Synfuels; Rheinmetal Denel Munition; Polokwane Silicon Smelters; ZF Auto Industrial Foundry; Hercul

Ferrochrome; Black Mountain Mining (Pty) Ltd; Arcelor Mittal South Africa; Anglo Gold Ashanti.

### **FACULTY OF HUMAN SCIENCES**

The Faculty of Human Sciences is diverse, wide and ideally placed for transdisciplinary disciplines. As such the Faculty seeks to position itself as a leader in research, teaching and community engagement in a transformed manner. During the year under review it contributed significantly to the university's strategic mission and vision as contained in the 2020-2025 Strategic Plan. It comprises five departments that are: the Centre of Sustainable Livelihoods, Education, Tourism and Integrated Communication, Legal Sciences and Visual Arts and Design. The five departments offer 16 qualifications.

**Table 1: Registered qualification headcounts**

Department	Undergraduate headcounts	Postgraduates		Total
		Masters	Doctoral	
Legal Sciences	2411	0	0	2411
Tourism and Integrated Communication	1598	34	4	1636
Education	808	0	0	808
Visual Arts and Design	655	13	1	699
<b>Total</b>	<b>5472</b>	<b>47</b>	<b>5</b>	<b>5554</b>

Our aspiration to change the human condition is supported by an outstanding qualification offering that attracts students mostly from across the SADC region. The Faculty had 5554 enrolments in total, 5472 of whom were undergraduate students including advanced and postgraduate diplomas. Our focus on improving postgraduate levels can be seen in the number of enrolments of 52 in 2021 of whom 47 were for Master's studies, 5 for Doctoral studies. In its endeavour to achieve its academic performance, students' pass and success rate is presented in the next table 2:

**Table 2: Student Pass and Throughput Rates from 2019-2021**

	2019		2020		2021	
	Pass Rate	Success Rate	Pass Rate	Success Rate	Pass Rate	Success Rate
<b>EDUCATION</b>						
Total all Campuses	93%	89%	90%	88%	98%	94%
<b>TOURISM AND INTEGRATED COMMUNICATION</b>						
Total all Campuses	90%	83%	88%	88%	94%	91%
<b>LEGAL SCIENCES</b>						
Total all Campuses	90%	76%	87%	87%	92%	89%
<b>VISUAL ARTS AND DESIGN</b>						
Total all Campuses	91%	91%	84%	82%	88%	74%
<b>Total all Departments</b>	<b>91%</b>	<b>84%</b>	<b>87%</b>	<b>86%</b>	<b>93%</b>	<b>87%</b>

The Faculty achieved an average of 93% pass rate and 87% success rate which is relatively higher as compared to 2019 and the highest as compared to other faculties. Furthermore, the Faculty awarded one Master's qualification and two Doctoral qualifications in 2021.

### **Teaching and Learning under the New Normal (Emergency Remote Teaching and Learning)**

To ensure flexible assessments and teaching and learning for our undergraduate students during the outbreak of the global pandemic (Covid-19), the Faculty successfully implemented Continuous Assessment (CASS) for all modules offered in the Faculty of Human Sciences. CASS afforded all students access to all assessment opportunities. The efforts to enhance student success yielded an average of 90.1% pass rate and 86.1% success rate as indicated in table 2, which is relatively higher as compared to 2019. A significant amount of training to improve academic digital literacy skills of academics and students on VUTela took place in 2020 through CAD. This training contributed to considerably more academic staff having their modules online on VUTela and Blackboard, this resulting in effective teaching and learning. Furthermore, teaching occurs online on VUTela blackboard collaborate, teaching of first year students is directed towards blended learning where classes are presented online and face to face. Each lecturer communicated the teaching medium on weekly basis. Classes are recorded and posted on VUTela, previous years' recordings are also posted on VUTela. Additional assignments and homework are given to students to encourage further reading and participation.

### **Research in the Faculty**

The demand for a responsive curriculum that produce competent graduates, leading entrepreneurs and leading innovators has seen the faculty aligning its research respond to various national, regional, and international agendas such as the National Development Plan 2030, Agenda 2030 on Sustainable Development and Agenda 2063 also dubbed Africa We Want. This has resulted in a steady growth of research outputs within the faculty over the years across its five departments.

Faculty staff members published 33 articles in journals and 16 chapters in books. Fifteen papers were presented at conferences. Table below gives the overview of outputs in the Faculty.

**Table 3: Research and Development**

Departments	Education	Tourism and Integrated Communication	Legal Sciences	Visual Arts and Design	Dean's office and CSL
Journal articles	14	10	5	1	3
Chapters in books	2	14			
Conference presentations	8	1	3	2	1
<b>Total</b>	<b>24</b>	<b>25</b>	<b>8</b>	<b>3</b>	<b>4</b>

While the year 2020 saw a record of 20.07 units from journals, conferences and book chapters, the year 2021 saw an increase of outputs to 30.46. This marks an increase of 10.39. Notably, Faculty is in the process of developing research focus area which will improve research outputs in the Faculty.

### **Improving staff qualification**

The Faculty has been making a determined effort to ensure that new staff members who are appointed have at least a doctoral qualification, and furthermore encourage existing staff to improve their qualifications to Master's and doctoral level. In 2021, the faculty saw 22 staff members registered for PhDs and 28 for Master's degrees. The Faculty will continue and is committed to support staff who want to improve their qualifications.

### **Community collaboration**

The Faculty is committed to social impact through community engagement programmes. The Law Clinic from Monday 29 November 2021 till Friday 03 December 2021 held a Wills Week event hosted at the VUT Technology Transfer and Innovation, in Sebokeng, where wills were drafted at no cost to the Southern Gauteng community. The intention with the Wills Week is to assist the members of the Sebokeng community with drafting of Wills free of charge. The community showed interest and came in numbers throughout the week to be assisted. Students from the department of Legal Science also participated in this important initiative. The department of Legal Sciences publishes the Legal Beagle on e-communication, the purpose of which is to enlighten the university community on various legal, policing and safety management topical issues on a monthly basis. Fashion students (3<sup>rd</sup> years) constructed cloth facial masks that were distributed as part of Community Engagement on 28 August 2020. Art for Aids in collaboration with the Centre for Health Education and Development held art exhibition on 26 February 2020. Bachelor of Education (BEd) students assisted Residencia Secondary School with Mathematics and Science.

On 27 October 2021 our advanced diploma in Public Relations Management students visited the Busy Bee Hospice in Vanderbijlpark where they engaged on various activities, such as: Cleaning and cooking, Serving food to patients, Washing the dishes and cooking utensils, Taking part in physical exercising games with patients.

The students concluded the day by handing out donations to the NGO that included: Money (R2000), Blankets, Clothes, and Seedlings (Onion, Spinach, Pumpkin and Watermelon). The official hand over of donations was done on the day of the main event, the 28 October 2021 by Student led by Mr. Manana who is the supervisor of the project.

Other community collaborations included:

Registering the domain name for the SA Armour Museum website and continues updating and development as requested by the museum.

Ster South. Newspaper article. 8 - 11 June 2021. Border Boys Parade commemorates heroes.

Steering committee NTCE - continued meetings with National Tourism Career Exhibition (NTCE) in collaboration with Gauteng Tourism Authority.

### **Faculty Highlights**

The Faculty furthermore celebrated one of its staff members, Dr K Dube, who obtained a National Research Foundation (NRF) rating at the end of 2020, becoming the first rated researcher from the Faculty of Human Sciences and one of eight in the university. The Advanced Diploma in TVT for Engineering College lecturers and the Advanced Diploma in Public Relations Management were fully accredited in 2020, while the Master's degree in Higher Education (taught program) was resubmitted to the CHE for accreditation and will be offered for the first time in 2022. DHET granted PQM clearance for the Bachelor of Communication Studies (HEQSF aligned, NQF 7, 360-credits, and contact mode). Funza bursaries were increased to 7.3 million Rand for BEd students. The Postgraduate Diploma in Policing was fully accredited in 2021. Successful merging and rebranding of the Hospitality, Tourism & PR Management to Tourism and Integrated Communication.

The Advanced Diploma (TVT) had its intake in 2021. The Master's degree in Higher Education was also fully accredited by CHE and registered by SAQA. The MEd will start in 2022 with approximately 40 students. The amount allocated to VUT under the Funza Lushaka bursaries



was increased and we also managed to get additional bursaries for the B Ed first-year students from SETA.

Tourism and Integrated Communication staff members are affiliated with the following Professional Bodies: SACA: South African Chefs Association; SAAFECS: South African Association for Family Ecology and Consumer Sciences: North-West branch; NSSA: Nutrition Society of South Africa; SAAFoST: South African Association for Food Science and Technology: Northern Branch.

## Conclusion

The faculty's future position looks solid with a number of staff having Masters and PhD qualifications. Investment in postgraduate recruitment and supervision is expected to boost future research outputs. As the faculty grows the hosting of Post-Doctoral and other research fellows can leverage and catapult faculty research position to greater heights. The Faculty is humbled by all staff members and students who put in the time and contributed to the faculty success under very difficult circumstances of the pandemic.

## FACULTY OF MANAGEMENT SCIENCES

### Faculty Overview

The Faculty of Management Sciences (FMS) consists of four departments: Accountancy, Logistics and Supply Chain Management, Human Resource Management and Marketing, Retail and Sport Management. In 2021, the faculty contributed significantly to the University's strategic mission and vision as contained in Strategic Plan (2020-2025). Its diverse and innovative programmes created valuable niches in the respective disciplines. The faculty's complement of student headcounts for undergraduate and postgraduate qualifications is presented in Table 1.

**Table 1: Registered qualification headcounts**

Department	Undergraduate & Postgraduate Diploma Headcounts	Postgraduates		Total
		Masters	Doctoral	
Accountancy	1663	3	0	3
Human Resource Management	791	24	20	44
Logistics	707	13	0	13
Marketing, Retail and Sport	1552	9	2	11
<b>Total</b>	<b>4713</b>	<b>49</b>	<b>22</b>	<b>71</b>

In terms of the overall student enrolments, the FMS demonstrated its commitment to contributing to the approved university enrolment targets. Despite the persistence of the COVID-19 pandemic, which continued throughout 2021, postgraduate students exhibited remarkable determination, a passion for knowledge and the desire to learn. Five students graduated with a master's qualification in the spring graduation and nine in the autumn graduations. Of note are the three doctoral qualifications awarded during the autumn graduations and one during the spring graduation.

Table 2 provides an overview of the various postgraduate qualifications awarded in the FMS during the Spring and Autumn graduations.

**Table 2: Masters and Doctoral Graduations in 2021 (Autumn)**

Name	Qualification	Graduation Ceremony
N.N Matshidza	MTech: Business Administration	Autumn 2021
L.M Mapalane	MTech: Cost and Man Accounting	
R.A Makateng	MTech: Human Resource Management	
L.M Loko	MTech: Human Resource Management	
N Maliwa	MTech: Human Resource Management	
R.E Sebolaoa	MTech: Human Resource Management	
M.B Mutheuwana	Master of Management: Marketing	
K.T.D Keta	MTech: Marketing	
T Chivhungwa	MTech: Logistics	
S Mugwenhi	PhD: Business Administration	
E Tarambiwa	PhD: Business Administration	
D.M Mahlangu	DTech: Business	

**Table 3: Masters and Doctoral Graduations in 2021 (Spring)**

Name	Qualification	Graduation Ceremony
N.S Cana	MTech: Business Administration	Spring 2021
L.A Sejake	MTech: Cost and Man Accounting	
M Seoka	MTech: Human Resource Management (Cum Laude)	
N.S Cana	MTech: Logistics	
M.K Mogano	MTech: Supply Chain (Cum Laude)	
J.Z Mudara	PhD: Business Administration	

The graduation headcounts provide further testimony of the efforts by the faculty to contribute to its financial sustainability. In total, 1217 students graduated in 2021 in the FMS. Further, the faculty was committed to convening Advisory Board meetings in all departments and, by doing so, strengthening the cooperation with professional bodies, industry, local government and TVET colleges. Increasing throughput rates, research outputs, tracking at-risk modules

and students, and improving staff qualifications remained essential faculty goals and were continuously monitored by the faculty.

### **Student experiences**

The COVID-19 pandemic persisted in 2021, together with various restrictions placed in the country based on the lockdown levels. The emergency remote teaching (ERT) model adopted by the VUT in 2020 was also maintained within the faculty. The ERT required a shift of instructional delivery to an alternative delivery mode to respond to crises. This model used recent technologies to support the change towards a learning-centred teaching and learning philosophy, with students taking responsibility for their learning. In line with the University's decision to move to continuous assessment (CASS), the faculty successfully implemented CASS in all its undergraduate modules, up to the postgraduate diploma level. Digital materials were developed by staff and delivered to students using the university's official LMS (VUTELA) and other supporting platforms such as email, WhatsApp and Facebook. Training on the use of VUTELA was provided to both staff and students by the Centre for Academic Development (CAD) on an ongoing basis throughout the year. Through online teaching and learning, the faculty ensured that all students participated in a challenging learning experience that transformed them into lifelong learners. Despite the challenges faced during the year, success rates for the 2021 year improved from 79% in 2020 to 84.2% in 2021. This improvement in success rates may be attributed to the improved delivery of online teaching and learning services by staff, who had gained considerable experience in using this model since its complete adoption by the university in 2020.

Ten staff members were selected as champions of the EON-XR pilot project. EON Reality is a global leader in Augmented and Virtual Reality-based knowledge and skills transfer for industry and education. With the support of the office of the DVC TL&SSS, the platform will be used to enhance teaching and learning.

Approximately 64 students in Sports Management were placed at various sports facilities to complete their work-integrated learning. Further, the students registered for Sport Practical 2 participated in a SAFA-Coaching training session over eight days, facilitated by various licensed officials from SAFA.

### **Research Endeavours**

Staff members presented 12 papers at virtual (Online) National and International conferences, and 12 articles (equivalence of 13 output units) were published in accredited journals in 2021. The decline in publications is because of the COVID-19 pandemic, making it challenging to

conduct fieldwork resulting from the imposed restrictions. However, the number of staff members engaged in research and the quality of journals in which research articles are being published have improved.

The faculty continued with the planned induction for students in the masters' and doctoral programmes. Four postgraduate induction sessions were held between May and June 2021 to support first-time students registered for master's and doctoral studies. In addition, students were allocated supervisors who required them to focus on specific research methodologies and topic selection. Furthermore, the faculty used the VUTela postgraduate studies group, where supervisors were networked in sharing research-related information. This information was then channelled to the students, who used it to complete their research proposals on time. VUTela was also used as a source of information for postgraduate students as reading material was uploaded there for their access. Due to the shortage of internal supervisors, the faculty also relied on the service provided by several consulting supervisors.

The faculty held several research capacity building workshops throughout 2021. These included several postgraduate supervision training workshops, data analysis workshops facilitated by Prof R Chinomona, and an academic writing retreat facilitated by the Centre for Scholarly Publishing Services. A research colloquium was held virtually in October 2021 to motivate staff to become active researchers. Three keynote speakers, namely Professors KC Moloji, J Surujlal and DT Goon, presented material focusing on article publishing, establishing a research culture and improving postgraduate supervision.

The FMS successfully developed its dedicated Research Focus Areas in 2021 and aims to maintain its support to staff members pursuing their vertical qualifications.

### **Community engagement**

VUT, through the FMS, participated in the ENACTUS regional competitions in April 2021. The VUT team succeeded in the regional competitions and was selected for the national competitions held in August 2021. Participating students formed two companies as an outcome of the VUT ENACTUS 2021 Project. These are (1) Note technology where students share information online, and (2) My Therapy- Psychologists who provide these services online at a fee. Both companies are supported by MTN.

The FMS also participated in the Student Entrepreneurship Week 2021, where the event was scheduled from 25 to 27 October. The faculty partnered with the Entrepreneurship

Development in Higher Education (EDHE), which sponsored the event. The Student Support Service division was also invited to provide support. Students presented their proposed entrepreneurial ventures, and the winning projects were given various awards in the form of vouchers to assist in the operations of their businesses.

### **Strategic partnerships**

The department of Marketing and Sport Management continues to be represented in the HET-QMB forum of the W&RSETA. The department has received approval for discretionary grant funding and award for 60 student bursaries via the Wholesale Retail SETA. The total bursary award was R4 231 224.49. Additionally, the Department of Accountancy was awarded R7.4 million worth of bursary allocation that will be used to finance studies of Advanced Diplomas and Postgraduate Diplomas for the 2022 academic year.

### **Conclusion**

Tribute is paid to all staff in the FMS for their commitment to duty throughout 2021. The students registered in the faculty also deserve praise for their resilience and patience in succeeding in their studies despite the scourge of the COVID-19 pandemic.

## **CENTRE FOR ACADEMIC DEVELOPMENT (CAD) REPORT TO SENATE**

Academic Development and Support comprises multiple operations and interventions with the overall purpose of providing the best possible academic experience to an undergraduate in South Africa. Our interventions, support programmes, initiatives and faculty partnerships are all intended to maximise the possibilities of retention and success. Our ultimate focus is thus on contributing substantially to the reduction of dropouts, and the improvement in the module pass rate and the qualification throughput rate. The intellectual and professional development of our students is entrusted into our care, and it is our responsibility to provide cutting-edge interventions, including academic support initiatives to maximise the deployment of individual learning energies, initiatives to deepen and broaden the pervasive and sophisticated use of academic technologies, and opportunities for academic staff development in pursuit of profoundly effective teaching practice.

The recently approved structure of CAD consists of four units / departments, namely Professional and Academic Development and Support; Student Academic Development and Support and Work Integrated Learning; Digital *Hub* for Teaching and Learning; Short Learning Programmes and Skills Development Provision.

During 2021 CAD enjoyed a productive year, characterized by continued progress in building productive partnerships with faculties as well as strengthening and sustaining services. The strategic driver of CAD involved the widening and the deepening of the Centre's impact on student success, as well as establishing network internal and external to VUT, i.e. being part of Siyaphumelela network. CAD also managed University Capacity Development Programme (UCDP) resources and projects as well as the National Programmes such as Next Generation of Academics Programme (nGAP), Nurturing Emerging Scholars Programme (NSEP), Future Professors Programme (FPP), Higher Education Leadership and Management Programme (HELMP), and Teaching Advancement University (TAU). CAD endeavours to contribute to all the VUT strategic objectives by supporting undergraduate students and teaching in a variety of ways. It specifically contributed towards VUT's **Strategic Goal 1: Quality Teaching and Learning** that is realized through Strategic Objective 1: Increased Student Success, Strategic Objective 2: Enhanced Student Academic Development, Strategic Objective 3: Increased Technology-Enabled Learning, and Strategic Objective 4: Improved Staff Development, as well as strategic objective number 6: Building a Curriculum of Excellence. Our work also includes **Strategic Goal 2: Increase research productivity: Strategic Objective 9: Increase Research Outputs.**

## **PROFESSIONAL AND ACADEMIC DEVELOPMENT AND SUPPORT**

The unit of Academic Staff Development is contributing to two important priorities of the VC predetermined objectives namely optimizing teaching and learning and promoting student access and success that contribute to the general meaningful and positive student experience. The Academic Staff Development programme includes amongst the following initiatives:

**Newly Appointed Academic Staff Orientation** - The Orientation was based on two themes, teaching at a University of Technology and promoting student success. In cooperating presentation by units that contribute to the triad role of academics, research and community engagement. The orientation programme as customary focused on Facilitation that enhances student learning, Scholarship of teaching and learning (SoTL) and the services that are offered by CAD and other support unit in VUT. The number of attendees vary each year depending on the appointments during that particular year.

**VUT Fellowship Workshop with Advance Higher Education** - The VUT fellowship project aims to develop a cohort of academics as internationally accredited teaching fellows.

**Generic Academic Staff Development Programme – Lunch Time On-Line Seminars on Authentic Learning Principles** - These webinars are based on generic topics that cut across disciplines and are based on research informed best practice in teaching and learning.

**Authentic Learning** - The rationale behind the engagement with Authentic Learning is informed by the global move in teaching and learning to embrace change. Currently, Authentic Learning is used in several South African universities to enhance collaboration and disciplinary multiplicity in improving student learning particularly in the context of technology enhanced teaching and learning.

**Teaching Advancement at University Programme** – VUT Participated in the Teaching Advancement at University fellowship as advisor and participant with the role of sharing best practice in teaching and learning in higher education. The Programme is envisaged as having a dual benefit, to an individual participant; and to the sector. The overall aims of the TAU programme are as follows:

- 1) To contribute towards the enhancement of teaching and learning in higher education in South Africa by supporting the development of a cadre of academics across institutions and disciplines as scholars, leaders, change agents and mentors in their fields;
- 2) To enhance the status and stature of teaching and popularize the understanding of teaching excellence in varied institutional and disciplinary settings.

**Scholarship of Teaching and Learning** - The SoTL for CAD initiative is aimed at contributing to the broad institutional objectives of increasing research productivity and improving staff development.

**Emergency Remote Teaching and Learning Resources for Academics** - The onset of the global pandemic COVID-19 and the following adopting of remote learning by VUT necessitated CAD to develop and source material to for Emergency Remote Teaching and Learning (ERTL). The team consulted with best national practice on ERTL and shared the material in the table below. The material developed during this period has been uploaded on VUTela and the dissemination is done in collaboration with E- Learning.

**License to Teach (LTT) Programme** - The pivot to emergency remote teaching and learning as a result of the COVID-19 pandemic has necessitated us to rethink and reimagine the way we do professional development programmes. CAD's License to Teach is one such programme that was initiated on VUTela in 2020 and continued in 2021. The team collaboratively conducted the LTT with E-Learning unit. Initially there was great interest in the programme with more than 80 academics expressing an interest. The aim of License to Teach is to provide and upskill academics with the necessary knowledge and skills to inform their teaching and assessment strategies and approaches.



## QUALITY TEACHING EVALUATION

The Evaluation Unit is to conduct evaluation of teaching exercise for modules offered at VUT. The Evaluation Unit has been using the Google form to conduct evaluations for academic staff. Due to its limitations, a Survey Monkey tool is being purchased to conduct the evaluations.

**Teaching Excellence Awards** - The teaching excellence awards process for 2021 was moved to 2022 due to lack of funding for the prizes for participants. We had received eleven (11) nominations, and we are providing support to the colleagues until they submit portfolios. The teaching portfolios will be assessed by the external evaluator and the awards will be held during the year 2022.

**The CAD Annual Conference** - The virtual conference call was generated and distributed to all staff. The theme is "*The university in a post-COVID world*". The sub- themes focus on topical issues in teaching during COVID-19 period, and dynamics of academic development representative of the various units in CAD. Ideally, the event should have taken place during the last week of November 2021 but delays in procurement necessitated the rescheduling to 2022.

## AFRICAN LANGUAGES DEVELOPMENT UNIT (ALDU)

The African Languages Development Unit is a strategic Unit of the University that focuses on the development of historically marginalised African languages in different forms within VUT. In terms of implementing one of the institutional priority goals, which is academic excellence, and as part of implementing one of the strategic goals which is to increase student support for academic development. The Unit coordinated and managed to perform the below mentioned activities:

- Development of Glossaries
- Working Committee Meetings
- Translation
- The Provision of Videos with Subtitles
- Provision of Editing Services in Sesotho and Sepedi
- Training of Tutors and Mentors on Translanguaging
- Provision of Sesotho and Sepedi Modules for Communication
- Review of Language Policy

## STUDENT ACADEMIC DEVELOPMENT AND SUPPORT

### Report on UCDP Activities

**Project 1: Activity 3 (Award Ceremony for 2020 first-year student top achievers)** - The online Award Ceremony for the 2020 first year student top achievers were hosted successfully on the 15<sup>th</sup> of October 2021. In total, 32 top achievers were awarded across the four faculties. The top achievers collected their awards on the 22<sup>nd</sup> of October 2021 at the PS-Building whilst observing Covid-19 protocol.

**Project 3: Academic Literacy Development** - The Academic Literacy's Facilitator position is still vacant, therefore the project could not take-off. The position has been advertised several times without getting an appointable candidate to date.

**Project 6: Tutor Programme** - A review was conducted on the Tutor Programme to provide insight into the programme. The review took place over two days whereby the review committee conducted interviews with the stakeholders and perused policy documents to determine alignment with policies and procedures with regards to the Tutor programme at VUT. This process is viewed as developmental and assist the newly appointed team to improve the quality of the tutor programme attests to certain quality assurance mechanisms being in place.

**Project 10: Activity 8 (Professional development for staff teaching first-year students)** - This activity implementation was dependent on the appointment of a FYE facilitator, who has resumed his duties on the 01 March 2022.

**2020 Top Achiever Research Study** - The aim of the study is to provide information about first year student success at the VUT that could be used to inform the development of the University's services and policies, as well as improving the experience of students who study at VUT. The interview transcriptions are ready for analyses where-after a research article will be developed for publication in a DHET accredited journal.

**Development of a First-Year Experience Student Satisfaction Survey** - The FYE student satisfaction survey is under development. The survey is intended to evaluate the following aspects of the First Year Experience: orientation, learning communities, academic advising, writing development for first-year students, mathematics, science, engineering, and technology development for first-year students, as well as the enhancement of multilingualism amongst peer mentors and tutors that mentor and tutor first-year students in their respective areas. However, it should be emphasised that a student satisfaction survey will provide a mere surface picture of student satisfaction in context of the FYE.

**Learning Communities (Student Mentoring Programme)** - This project aims to foster the development of learning communities to provide first-year students with academic and psychosocial support to enhance student success and academic development. It plays a

significant role in improving success rate by supporting first-year students academically and socially. 93 senior students served as mentors to assist first-year students for 2021.

**Career Development Projects** – a total of 98 students participated in the various sites visits planned for the 2021 academic year.

**Mentor Awards Ceremony** - Mentors have been passionately assisting first-year students throughout the year on a hybrid mode (both Virtually and one-on-one sessions). To award and honor their devotion in this programme, an Award Ceremony was organized on the 30<sup>th</sup> November 2021, at Desmond Tutu Hall. 43 mentors received their awards on the day.

**Academic Advising:** Academic Advising plays a critical role in connecting first-year students with learning opportunities to enhance their learning, development, and engagement. This project aims to foster the development of Academic Advising at VUT to enhance academic development and student success amongst first-year students. Four students' faculty advisors were appointed, one allocated to each faculty. The Framework pertaining the development of academic advising at VUT was developed which include towards defining academic advising in VUT context, mission, objectives and academic advising cycle and stakeholder involved in academic advising cycle were identified. FYE manager, 2 Student Faculty Advisors and 1 head faculty administration (Faculty of management Science) attended AAPD Short Learning Programme (SLP) with University of the Free State (UFS).

**Writing Lab:**The Writing Lab assists students with all aspects of academic writing interventions and activities. Aspects of writing include reading strategies, writing research proposals, writing, and formatting of scientific reports, referencing, paraphrasing and general academic writing. These strategies were used in individual and group consultation as well as in workshops. A total of 1163, 205 students in consultations and 958 in workshops.

#### **DIGITAL HUB FOR TEACHING AND LEARNING (E-LEARNING)**

The eLearning unit continue to work with undergraduate and postgraduate students as well as the academic staff to equip them with the necessary tools on the use of computers, the institution's preferred Learning Management System as well as any other software applications needed in the teaching and learning process. At the start of the 2020 academic year, a global pandemic forced VUT, and educational institutions worldwide to rethink their teaching, learning, and assessment strategies to accommodate for the rapid spread and repercussions of COVID 19. VUT had to implement Online learning and teaching and the CAD was at the forefront of this agenda. Various initiatives were put in place to achieve successful online learning and teaching, i.e.:

**VUTela Staff Training and Support** - This project aims at ensuring that the VUT staff always have access to the necessary skillset to use the institution's LMS. One of the activities that we carried out was ensuring that all students and academics had access to their Online teaching and learning modules in collaboration with the Information Technology (IT) services department. All 6789 modules on VUTela are designed on a template.

**VUTela Student Training and Support** - This activity was meant to equip students with skills to navigate the LMS. A total of 5504 students was assisted and attended the VUTela online trainings.

**Hiring of Student Buddies** - This project aims to enhance student support, which is in line with Strategic Objective 2, to increase student academic development.

**The Grades Journey** - This project intends to drive the creation of authentic assessment activity on Blackboard Learn so that a later Predictive Analytics Project has the necessary data to help instructors improve student success.

**Creation and implementation of online modules** - Providing interactive and constructive as well as aligned meaningful learning experiences for all students in Online modules has not been without challenges. The project was initiated to ensure that students have equal and fair access to teaching and learning and most importantly that there are ample opportunities for meaningful learning.

**Online Assessment** - As is the case with most institutions, VUT had to change their assessment approach and initiated the Continuous Assessment (CASS) approach. This implies that students will primarily be required to submit tasks via the LMS unless stated otherwise by the respective lecturer. The e-learning unit did research and found out that other universities are using additional building blocks on Blackboard such as a proctoring tool. Therefore, Respondus was the selected tool, to date the deviation form for the purchase of the software is at procurement level.

**The moving of the current LMS to the latest version called ULTRA** - eLearning has reviewed the latest release of the Blackboard Learning Management System software and have migrated to the ULTRA version on the 30 of June 2021.

**The Implementation of Early Warning System** - This project aims to identify at-risk students and allow academics adequate time to implement the intervention as early as possible. The Analytics for Learn installation is complete and various users are being trained on how to navigate the platform.

**Graphic design services** - Graphic design services aim at ensuring that all documents, posters, and PowerPoint adhere to the institution rules and regulations of the design.

**EON:** The purpose of the EON system is to expose students and academics alike to the virtual reality experience of practical lessons. Four users from the Center of Academic Development

were trained as system administrators. To ensure that they are equipped with the necessary skills to effectively support users. In addition, 20 academics went through the basic educators' training and this will continue throughout 2022. In November 2021, the CAD met the Heads of Departments (HOD's) of the Faculty of Engineering and Technology to discuss and outline the way forward with regards to educational technologies that the institution currently has available, these included PTC, Math Cad, and EON technologies. As the institution we need to increase the widespread adoption and use of these system or platforms.

## **E-SKILLS and SHORT LEARNING PROGRAMMES**

The CoLab has been merged with the Short Learning program unit and is now known as the Short Learning Program (SLP) and Skills Development Provision (E-Skills) under CAD. The E-skills CoLab trained in 4 categories for 2021: basic digital literacy for citizens, ICT specialist courses (IBM) and COURSERA for unemployed graduates and people who wanted to up-skills and re-skills themselves into the 4IR world and lastly Digital Transformation for the Government employees.

The following numbers were trained for 2021 (excluding mid-November to mid-December).

<b>Category</b>	<b>Participants</b>	<b>Number trained</b>
Basic Digital Literacy (Microsoft and Mobile Literacy)	Communities, Inmates	1615
ICT Specialist 4IR (IBM)	Participants with IT Background including VUT IT Students and Northern Cape and Gauteng Government employees	231
ICT Specialist 4IR (COURSERA)	Participants with IT Background including VUT IT Students and Northern Cape and Gauteng Government employees	447
Digital Transformation for Government employees	CHIETA, DCS (Department of Correctional Services) & Teachers from Northern Cape and Gauteng	130

### **Ad-hoc projects includes:**

- Cell Phone Repairs
- KAXU Solar – Mentoring and Coaching
- Department of Correctional Services (DCS)

## CO-OPERATIVE EDUCATION

Co-operative Education facilitates a unique learning experience which delivers a specific type and level of knowledge, understanding and skills development through learning by applying theory in practice. Co-operative Education is the umbrella term that is used to summarise all activities such as placement of WIL students, Internship, etc. Work Integrated Learning as a pedagogy of learning consist of different modalities. In VUT, Workplace Based Learning is used as a compulsory modality in most disciplines offered through a centralised-decentralised model.

### **Self-Evaluation of the Department**

The Co-operative Education unit underwent an External Review from 15 – 16 September 2021. The improvement plan is being developed based on the recommendations working with the Quality Promotion Unit.

### **Funding applications**

The Department submitted applications for the following SETA's:

- LGSETA, HWSETA, Bankseta, Cathsseta, EWSETA, FOODBEV SETA, PSETA, SASSETA.

The department has received positive feedback on the approval of the funding applications made from the following SETA's:

- EWSETA, FOODBEV SETA, Bankseta, Cathsseta, HWSETA.

## RELATIONSHIPS WITH INDUSTRY

**Career fair & Co-op Magazine** - Companies are invited to set up stalls and provide students with the necessary information on available job opportunities. Students are given the opportunity to interact directly with our industry partners. The Career Fair for 2021 is combined with the Co-op Magazine. Companies have been invited to send all their marketing and other related material electronically so that it can form part of the annual Co-op Magazine.

**Employer awards function** - The Department strengthens its relationship with companies by means of hosting an Employer Function annually. All stakeholders who are exceptionally participating in the University's Co-operative Education programmes are nominated by relevant departments from Faculties and are awarded with certificates. The Employer Awards Function for 2021 is postponed to 2022 due to the current lockdown restrictions.

**Companies Hosted on Campus** - The Department host companies on campus for the purpose of interviews and presentations. Companies are assisted with relevant venues and administration in scheduling of the interviews and/or presentations. The Department hosted an online guest lecture on 21 September 2021 "What makes a successful PR Professional".

The guest lecture was delivered by the co-founder of Eclipse Communications. This guest lecture was attended by 188 participants.

**Students Requested by Companies** - The Department recruit companies and these companies contact the Department on a daily basis for WIL, internship as well as permanent placement opportunities for students. Most of our Industry partners contact the office requesting CV's of students for different placements. The Department still receives requests from companies via email and process the requests accordingly.

#### **Development of MoA's and MoU's**

The Department develops MoA's and MoU's in conjunction with its industry partners for WIL and Graduate placement. The following agreements were finalised:

- ICITP, LEDET, AFROX, AfriSam, SISA, JHB City Park (JHB Zoo)

The Department is currently busy with the following agreements:

- Midvaal, CWI, Emfuleni Municipality

### **ACTIVITIES**

**Employability Workshops** - Previously the Department used to invite professional persons from Industry to prepare students in terms of CV writing, job search and interview skills as a preparatory programme for students. To save costs, the Department is now facilitating these workshops for students. Students can come on an ad-hoc basis requesting to be assisted with these skills or alternatively students are advised to attend on the scheduled dates.

**Awareness campaigns** - The purpose of the Awareness Campaigns is to create awareness amongst students. Students receive an understanding of what Co-operative Education and Work Integrated Learning is all about and the procedures to be followed. These campaigns are not limited to WIL students only, but they are open to all VUT students to attend. The Awareness Campaigns were incorporated into the Employability workshops.

**Placements on campus** - The Department assists students in finding placement opportunities for Work Integrated Learning and Internship on campus. This excludes students placed on campus for SETA projects.

**Work Readiness Programme** - The Department facilitates on a weekly basis the Work Readiness Programmes. More than 200 students have enrolled for WIL training in the following disciplines:

- Mechanical Engineering
- Power Engineering
- Electronic Engineering
- Process Instrumentation
- Industrial Engineering

## **WIL Registrations**

- Total WIL registrations from 01 January 2021 to 30 November 2021 = 1 793
- Total P1 reports received from 01 January to 30 November 2021= 404
- Total P2 reports received from 01 January to 30 November 2021 = 756
- Total reports received from 01 January to 30 November 2021 = 1 261
- Total diploma applications processed from 01 January 2021 to 30 November 2021= 366

The total of WIL students includes only WIL registered students and excludes those who are placed but not registered.

## **PROFESSIONAL DEVELOPMENT**

Several colleagues are engaged and different stages with programmes towards their professional development. Such qualification will enhance their skills and knowledge as they engage with staff and students. Dr Corneli have accepted the DHET's invitation to serve as a peer academic and panel member in the upcoming round of institutional audits in 2022. Dr Chili has also been accepted to for the 2022 TAU Fellowship. Such learning and participation in national project will strengthen capacity within CAD and ultimately improve on the quality of services to our stakeholders. Professional development included the attendance of various conferences / seminars.

## **CONCLUSION**

The VUT HR recruitment and appointment processes remain slow which have to date caused significant delays in projects and/or activities that include a loss of funding. Likewise, DHET change request approval processes take very long which negatively impact project implementation. On a positive note, as the year progressed there was increasing collaboration within CAD staff and its functions. For our Centre to be effective and responsive to the needs of our staff and students, collaboration and teamwork remain key. Despite the Covid challenges, the Centre managed to carry on with its mandate and be of service to our stakeholders. Couple of other challenges included late staff appointments, unavailability of data for students support services, inability of placed students to register their WIL due to financial blockage amongst others.

## **STUDENT SUPPORT SERVICES REPORT TO SENATE**

Student Support Services is a dynamic area with ever-changing boundaries, whose focus is on forging inter-relationships between different aspects of student life at the Vaal University of



Technology (VUT). It has the ultimate goal of helping students not only to access higher education, but to succeed in it. This Division is expected to keep responding effectively to all the challenges that VUT has to contend with on a regular basis.

Student Support Services strives to ensure that Vaal University of Technology provides quality student experience in a collegiate environment. Support programmes are provided from the time when students join university until they complete their studies. The division is made up of the following units/departments that work together with an intention of achieving common goals: VUT Sport, Student Life and Governance, Student Counselling and Support, HIV/AIDS Unit, Student Accommodation as well as the Campus Clinic.

## **VUT SPORT**

The strategic focus of VUT Sport is to broaden access and participation in sport. The department facilitates the engagement of student and staff in sport and recreation by providing them with opportunities to actively participate in sport. The department retains administrative and financial responsibility for participation of students in competitive and recreational sporting codes at regional, provincial and national level.

The VUT Stadium is well maintained in order to create a safe and enabling environment. This function is critical to keep the fields attractive and a marketing point of the university. The following developments have been completed soccer poles for C field installed, walls inside stadium were repaired, western and northern side precast wall repaired. Palisade fence to close off the parking area has been installed.

**The volleyball Club:** The VUT men attained position four and women won bronze medal. The captain Ms. Makhosazana Dlamini was voted the best blocker of the tournament. VUT ladies qualified for the Zone 6 club championship to be held in Mozambique 06-16 Jan 2022.

**Softball Club: USSA National champion men and woman:** Three male and female students as well as a manager were selected to form part of the USSA national teams. VUT Softball ladies' player Ms. Koketso Ramaila and Ms. Moshibudi Mswazi were selected to form part of the under 18 Junior national team to travel to Lima, Peru - December 2021.

**Netball:** Sedibeng Netball selected four (4) players from VUT Netball to represent the district in the 2021 Spar U21 & Senior National Netball championships held in Cape town.

**USSA Basketball:** The ladies' basketball team was crowned National USSA Champions for the 11<sup>th</sup> time. The men's team received a bronze medal (3rd position) after an upset and it conceded defeat in the semi-finals against a strong University of Johannesburg team.

**Football Club:** The VUT football team is the epitome of the department's mandate to create real opportunities for student athletes which could change their lives forever. Televised matches provided the invaluable marketing of the VUT brand and exposure for players to be recruited by professional clubs. The display of football and conduct of VUT players was applauded by all stakeholders who had an opportunity to watch the team play their enterprising football. Games were televised on SuperSport and covered in a range of media platforms.

**The University Sport Company (USC) 2021:** The institution is a member in good standing of the University Sport company and has signed the media rights agreement. The marketing, public relations and total student experience will be extended to 2022 because the **Football club qualified for the 2022 Varsity Football** as resolved by the USSA NEC in view of concerns regarding the impact of COVID19 long suspension of sport. The Basketball men and women qualified for the 2022 Varsity tournament and Athletics club was tipped to form part of the teams that will participate. However, due to the unfavourable financial climate the teams will not compete due to the high cost of attending the tournament.

## **STUDENT LIFE AND GOVERNANCE**

Student Life and Governance (SLG) is one of the six subdivisions of Student Support Services. It provides and manages opportunities for optimal student experience.

SLG supports SRC, student structures with regards to student development and training, elections, policy review, administration, and management. Most of the activities were heavily impacted by the Covid 19 pandemic and as the primary deliverables essentially involved physical gathering/ contact, the number of actions and activities that took place was also impacted.

The unit focused on two major deliverables in 2021, these were the SRC Constitutional Summit as well as the SRC elections. In addition to these deliverables, the department continued to implement and improve on administrative processes through the development of Standard Operating Procedures

**The SRC Constitutional Summit:** The previous SRC Constitution was last ratified in 2009 and has posed several challenges during SRC Elections. A constitutional summit was scheduled for the third quarter of 2021, due to limitations posed by the National State of Disaster, it was determined that the summit should continue in an online format. The summit process was concluded in September 2021, and the SRC's Constitution was amended accordingly and approved by the VUT Council.

**SRC Elections:** The SRC Elections are an indispensable process allowing students to vote into office their preferred candidates and organisations who will serve and represent their interests in the Student Representative Council (SRC). In 2021, the Student Life and Governance Office successfully piloted online SRC elections. This was done primarily through the constitutional review process and the availability of an on-line elections process. The development of an in-house solution (with IT) was delayed. KDBS consulting successfully implemented and executed online SRC elections as well as the constituting of elected members in November and December 2021.

The following statistics are relevant to the process:

4. 9037 ballots were submitted out of a possible 20 673 eligible voters. This meant a 44% overall voter turnout which was the highest recorded turnout in recent VUT elections.
5. In proportional seat elections, the EFFSC received the largest proportion of votes (5 819 or 64.9% of total votes cast). They were followed by the SASCO who received 2001 votes or 22.3% of the total votes cast.
6. With respect to two independent seats, candidate Tshembani Trust Manganyi received 3 135 votes or 29.4% of total votes cast. the second independent candidate was Mr Ntsako Qhibi who received 2 954 or 27.7% of the total votes cast.

## **STUDENT COUNSELLING AND SUPPORT**

Student Counselling and Support Department is committed to ensuring that students receive care and support, addressing barriers that may inhibit them from reaching their academic goals and creating spaces for students to gain critical skills that are needed for lifetime success. Whilst Covid-19 impacted on each area of the Department's functions, the Student Counselling and Support staff never lost sight of providing mental health and wellbeing support to the students. The year 2021 was marked by a complete overhaul of the way in which Student Counselling and Support Department provides services. The student Counselling and Support Department transitioned to tele-therapy in a manner that did not compromise student access, privacy and confidentiality.

The therapeutic team implemented 30 psycho-educational outreach sessions which involved 250 students and offered therapy to 1297 students over 60 sessions in response to the diverse needs of students. The therapy sessions conducted were related to relationships, anxiety and emotional imbalance. The team also utilised social media platform to inform students about the 24/7 helpline provided by Higher Health and also provided them with bibliotherapy.

The University Pastoral Counsellor provided bereavement counselling to 11 students over 26 sessions and offered containment to 6 students who were further referred for therapy. The psychometrists' unit remained driven by commitment to foster student learning through rendering workshops on adjustment to university life, career development and job preparation. There were 876 students that were supported with programmes such as study skills, time management, career choices and job preparation.

## **STUDENT ACCOMMODATION**

The department's primary focus is to create conducive living and learning environments for students who are registered at the Vaal University of Technology by providing accommodation solutions for on campus university owned residences as well as off-campus privately owned residences. In order to identify suitable private accommodation, an Accreditation Committee was established and committee members received appointment letters. The accreditation process started on the 18th October closed 5th November 2021. The evaluation of residences started on 22 November 2021 and was finalized on 5 December 2021.

Students received psycho-social support through the assistance of Wardens who also act in Loco Parentis, offering emotional and pastoral care to student. Covid 19 protocols were adhered to as staff and students were monitored to follow policies. Needy students received sponsorship in the form of food and toiletries from Seriti Mining and Gift of the Givers Organisation and that made the situation manageable as residences controlled the movement of student by also allowing students minimal times to visit shops for their basic needs. Victim Empowerment Centre was launched in 2020 and renovations started and the center is at 98% to completion.

Living and Learning Unit continued with physical activities in smaller groups to keep students who were on campus busy when they were not engaged in academic work. The University residence had few students as most participated in online learning. Mentorship programmes were severely affected by the pandemic as students could not engage with their mentors

whilst online was the only means of learning. Maintenance schedules were conducted on rotational basis to adhere to the 60/40 staff ratio on /residence campus as guided Department of Health and DHET, and some staff members got infected and affected by the pandemic. Strict measures of assessment were conducted by the wellness staff before a student or staff members returned to work.

#### **HIV/AIDS Unit**

The institutional HIV/AIDS Unit is responsible for the coordination, facilitation and implementation of HIV/AIDS, health, wellness mobilization and development programmes in line with VUT Policies and Procedures.

#### **Prevention and Awareness Campaigns to Break the Cycle of new HIV/TB/STI's/COVID-19 Transmissions**

<b>First Year Students Orientation</b>	<b>HIV/TB/STI's Programme</b>	<b>COVID SCREENING:</b>
1000 Of First Year Students reached on Orientated week.	Screened and Tested: 2 286	Daily screening Average:110
Risk Assessments Forms: 1840	Number of Campaigns hosted: 3	Total Screened: 2 000
Referral of at-risk students: 24	Number of HIV Positive Students: 30	Total Tested: 18 <b>Deaths: 0</b>

#### **Development of effective Implementation of Peer Education Student Internship & WIL Programme**

<b>Student Peer Education</b>	<b>Student Internship &amp; WIL</b>
Peer Education Activities: 6 087	Monitoring and Evaluation on VUTELA and reporting.
Educational Sessions: 1 144	Appointment of additional x2 Interns
Risk Assessments: 4 886	Student Entrepreneurship Week Activities SEW
X2 Students Virtual Webinar	
Students Virtual Webinar with the University of Fort Hare.	
Peer Education Certificate ceremony	
Collaboration on GBV Programmes: WITS and VUT Visit to University of Mpumalanga.	

## HEALTH AND WELLNESS (CAMPUS CLINIC)

Campus Health Services (Campus Clinic) renders a comprehensive primary health care service. The clinic provides the following services for both students and staff: emergency medical services; paramedics on site; reproductive health services; family planning; male circumcision; health talks; ARV programme; treatment collection for Student and Staff; HIV/AIDS Testing; 90-90-90 strategy by National Department of Health; PrEP was introduced on Tuesday (01 June 2021) and marketed via VUT FM; 8 (eight) students qualified to be initiated. PrEP is the use of anti-HIV medication that keeps HIV negative people from getting HIV. Four professional nurses from Campus Clinic attended and passed Covid-19 Vaccination training offered by the Department of Health and 455 Staff members attended the Faculty Board meetings whereby vaccination information was disseminated.

### Special projects

South African Blood Transfusion (SANBS) blood drive VUT Community blood donors	42 donated
Physical Assessment were done on 2 <sup>nd</sup> year Sports Management students doing SAFA Practical's Course	144 Students
Hepatitis Vaccines for Biomed Students in the Faculty of Health Science	804 students 7staff members
FLU Vaccination Campaign	211 Students 477 staff members
<b>TOTAL</b>	<b>688</b>

## SECTION 12

# REPORT OF THE SENATE ON RESEARCH AND TECHNOLOGY TRANSFER & INNOVATION

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### 1.1 Introduction

Research remains a core mission of the Vaal University of Technology. In the last few years, efforts have been made to improve the research capacity of staff and students and the general research outputs and outcomes from the university. This document reports on core research activities undertaken during the year 2021, including research outputs, the state of research entities, summary of NRF grant holders and rated researchers, research capacity development undertaken, research achievements and recognition of researchers at VUT, and postgraduate training activities.

The Research and Innovation office comprises of the following functions

- Research Management
- Technology Transfer and Innovation

Under Research Management at VUT we have:

- Publications/Research Outputs
- Grants Management Unit
- Higher Degrees Unit
- Research Ethics
- Postdoctoral Fellowships
- Research Information Management Systems
- Research Capacity Development for staff and students

### 1.2 Research Management

#### 1.2.1 Research Structures

In August 2021, the VUT Research Executive Forum (VUT REF) approved the following focus areas for respective faculties (Table 1).

**Table 1: Approved Focus Areas per Faculty**

<b><u>Faculty of Human Sciences:</u></b>
1. Sustainable Integrated Human Sciences Development in the Sedibeng district
<b><u>Faculty of Applied and Computer Sciences:</u></b>
1. Medical, Health & Wellbeing
2. Water & Remediation
3. Information Systems & Smart Technology Applications
<b><u>Faculty of Management Sciences:</u></b>
1. People management and organisational behaviour studies
2. Supply chain, logistics and sustainability studies
3. Digital marketing, consumer behaviour studies, leisure sport marketing and sustainability
4. Financial and cost management accounting, and accountability
<b><u>Faculty of Engineering and Technology:</u></b>
1. Manufacturing Technologies
2. Water
3. Energy supply
4. Sustainable Beneficiation

### **1.2.2 Research Outputs for 2021**

The target for research output units for 2021 is 127 units, by 31 December 2021 a total of 133 units were recorded. The following tables provide a breakdown of the outputs according to different parameters.

**Table 2: Research Output Units per Faculty**

<b>Faculty</b>	<b>Units</b>
Engineering & Technology	40,17
Applied & Computer Sciences	33,83
Human Sciences	26,77
Non faculty	22,38
Management Sciences	10,04
<b>Grand Total</b>	<b>133,19</b>



**Table 3: Research Output Units per publication type**

Publication Type	Units
Books	5,00
Chapters	13,40
Conference proceeding	11,83
Journal article	102,96
<b>Grand Total</b>	<b>133,19</b>

**Table 4: Number of publications and the number of authors**

Publication Type	No of publications	No internal authors	Units
Journal article	166,00	122,00	102,96
Conference proceeding	26,00	32,00	11,83
Chapters	26,00	12,00	13,40
Books	1,00	4,00	5,00
<b>Grand Total</b>	<b>219,00</b>	<b>156,00</b>	<b>133,19</b>

**Table 5: Number of publications and the number of authors per faculty**

Name	No staff	No publications	Units
Applied & Computer Sciences	59,00	68,00	33,83
Engineering & Technology	41,00	54,00	40,17
Human Sciences	27,00	60,00	26,77
Non faculty	20,00	36,00	22,38
Management Sciences	16,00	18,00	10,04
<b>Grand Total</b>	<b>156,00</b>	<b>219,00</b>	<b>133,19</b>

**Table 6: Top fifteen contributors to research output units**

Surname	Faculty	Units
Dube	Human Sciences	14.96102
Ofomaja	Applied & Computer Sciences	11.5686
Lebelo	Human Sciences	10.41445
Zuva	Applied & Computer Sciences	9.6001
Mtunzi	Applied & Computer Sciences	8.3431
Naidoo	Applied & Computer Sciences	8.1769
Madzimure	CAD	7.2424
Shooto	Applied & Computer Sciences	6.7834
Moloi	Human Sciences	6.6401
Moloto	Applied & Computer Sciences	6.3725
Motseki	Human Sciences	4.9999
Pakade	Applied & Computer Sciences	4.9865
Diaboya	Applied & Computer Sciences	4.9547

Xaba	Applied & Computer Sciences	4.5268
Okosun	Applied & Computer Sciences	4.5163

- Highlighted are the researchers who are no longer with VUT

**Table 7: Number of publications according to gender**

Name	Female	Male	Grand Total
Applied & Computer Sciences	23,00	36,00	59,00
Engineering & Technology	4,00	37,00	41,00
Human Sciences	13,00	14,00	27,00
Management Sciences	4,00	12,00	16,00
Non faculty	6,00	14,00	20,00
<b>Grand Total</b>	<b>50,00</b>	<b>106,00</b>	<b>156,00</b>

### 1.3 Summary of NRF grant holders and rated researchers

#### 1.3.1 NRF-rated researchers

The list of rated researchers is shown Table 8 (below). It must be noted that *four (4) new rating applications was approved by NRF in 2021 to resume in January 2022*. Three (3) researchers were awarded under the Y2 category, and one (1) researcher was awarded a C2 rating. These new rating approvals have increased the number of rated research from 8 in 2020 to 12 at the end of 2021. It is clear from the list that all VUT NRF rated researchers are male. Whilst female staff constitutes about 45% of all instructional and research staff, VUT does not have female a single NRF rated researcher. Additionally, the majority of that current VUT NRF rated researchers are affiliated with the Science and Engineering faculties, there is therefore a need to encourage researchers from the Faculties of Management and Human Sciences to participate in the NRF rating process.

**Table 8: VUT NRF Rated Researchers**

Entry	Surname	Initials	Title	Gender	Rating Category	Valid From	Valid Until
1	Shooto	ND	Dr	Male	Y2	01 Jan 2022	31 Dec 2027
2	Venter	D	Dr	Male	Y2	01 Jan 2022	31 Dec 2027
3	Otunniyi	IO	Prof.	Male	C2	01 Jan 2022	31 Dec 2027
4	Akpotu	SO	Dr	Male	Y2	01 Jan 2022	31 Dec 2027

5	Dube	K	Dr	Male	Y2	01 Jan 2021	31 Dec 2026
6	Rutto	HL	Prof.	Male	C3	01 Jan 2020	31 Dec 2025
7	Pillay	M	Prof.	Male	C3	01 Jan 2019	31 Dec 2024
8	Campbell	RI	Prof.	Male	C1	01 Jan 2019	31 Dec 2024
9	Pakade	VE	Prof.	Male	Y2	01 Jan 2018	31 Dec 2023
10	Okosun	O	Prof.	Male	C2	01 Jan 2018	31 Dec 2023
11	Osifo	PO	Prof.	Male	C2	01 Jan 2017	31 Dec 2022
12	Tengen	TB	Prof.	Male	C3	01 Jan 2017	31 Dec 2022

### 1.3.2 NRF Grant-holders

Table 9 shows the list of different NRF grant holders. In 2021 four new Thuthuka Programme grants were awarded, bringing the total to seven (7). In addition, two new NRF prestigious grants namely the Black Academics Advancement Programme and Competitive Support for Unrated Researchers, were awarded to Mr Melato and Dr Ssemakalu, respectively. Notably, most of the NRF grant holders are affiliated with the departments in the Faculty of Applied and Computer Sciences.

**Table 9: Current NRF grant-holders**

Entry	Grant-holder	Programme	ShortTitle	Start	End
1	Pholosi, A	Thuthuka	Polydopamine-Cyclodextrin Coated Magnetic Yolk-Shell Nanoparticles for Adsorption/photodegradation	01-Jan-22	31-Dec-24
2	Maboya, WK	Thuthuka	Modified Carbon Nanotubes as Electrochemical Detectors and Adsorbents for Persistent Pharmaceuticals	01-Jan-22	31-Dec-24
3	Ramalisa, RJ	Thuthuka	A Model to Cultivate Attentiveness of Nurses Working in Mental Healthcare	01-Jan-21	31-Dec-23
4	Takaidza, S	Thuthuka	The Effect of Tulbaghia Violacea Leaf Extracts on the Expression Levels of Proteins Involved in Apop	01-Jan-21	31-Dec-23
5	Shooto, ND	Thuthuka	Adsorption Study of Toxic Metal Ions and Methylene Blue Dye from Solution Using Black Cumin (nigella	01-Jan-20	31-Dec-22
6	Modise, SJ	Competitive Support for Unrated Researchers	Wetlands' Restoration and Phytoremediation	01-Jan-21	31-Dec-23
7	Pakade, VE	Research Development Grants for Y-Rated Researchers	Development of Dual-Imprinted Polymers Decorated on Graphene Oxide for Selective Removal of Antibiot	01-Jan-20	31-Dec-22

### 1.3.3 External Grant Funding and Bursaries

The total grant funding received from external funding sources was R24 580 286 and target set by the university for 2021 of R30 million 2021. This total is divided into general grants of R11 615 847, NRF Grants of R6 069 439 and R6 895 000 in external bursaries (Table 10).

Interestingly, the VUT contribution to research was R17 535 541.00, total funding for research in 2021 was R42 115 827.00 (external and internal funding total).

**Table 10: External Grants and Bursaries**

General Grants	Research Project	Amount Awarded 2021
Prof HL Rutto (PAMSA)	University Collaboration Programme	370 000,00
Prof HL Rutto (ESKOM)	University Collaboration Programme	393 000,00
Prof PO Osifo (SASOL)	University Collaboration Programme	464 088,00
Dr H Chiririwa (CHIETA)	University Collaboration Programme	510 000,00
Prof HL Rutto (COCA)	University Collaboration Programme	100 000,00
Dr NA Feto (SABDI BIO-DESIGN)	University Collaboration Programme	1 247 644,52
Dr WR Matizamhuka (TiCOC)	University Collaboration Programme	792 320,00
Dr WR Matizamhuka (SASOL)	University Collaboration Programme	500 000,00
Prof PO Osifo (CHIETA)	University Collaboration Programme	112 500,00
Dr WR Matizamhuka (CSIR)	University Collaboration Programme	3 248 593,28
UCDP (Research portion)	University Collaboration Programme	3 390 000,00
Prof F Mtunzi (SASOL)	University Collaboration Programme	487 701,20
<b>Total</b>		<b>R11 615 847,00</b>
NRF FUNDING (Grant-holders)	Programme	Amount Awarded 2021
Dr T Xaba	Thuthuka programme	114 584,00
Dr WK Maboya	Thuthuka programme	143 000,00
Dr ND Shooto	Thuthuka programme	15 000,00
Ms T Erasmus	Thuthuka programme	30 000,00
Ms RJ Ramalisa	Thuthuka programme	17 500,00
Mrs S Takaidza	Thuthuka programme	81 025,00
Prof SJ Modise	Competitive programme for Unrated Researchers	382 500,00

Prof Pakade	Competitive programme for Rated Researchers	100 000,00
Prof Pillay	Competitive programme for Unrated Researchers	370 000,00
Dr K Dube	Evaluation and Rating programme	50 000,00
Dr SO Akpotu	Postdoctoral Fellowships	305 000,00
Dr MG Peleyeju	Postdoctoral Fellowships	245 000,00
Dr Lawal	Postdoctoral Fellowships	305 000,00
Dr Leudjo	Postdoctoral Fellowships	305 000,00
Dr ME Monapathi	Postdoctoral Fellowships	245 000,00
Dr WR Matizamhuka	NRF National Equipment Programme	2 866 830,00
Mr EM Sibanda	NRF-NGap	30 000,00
Mr V Mukundamago	NRF-NGap	30 000,00
Prof T Tengen	Incentive funding for Rated Researchers	40 000,00
Dr A Pholosi	IRG - National Natural Science Foundation of China / NRF Research Cooperation Programme	394 000,00
Total		<b>R6 069 439,00</b>
NRF Student Scholarships	Bursary Support	<b>R4 940 000,00</b>
CSIR-DST Inter-Programme Bursary	Bursary Support	<b>R1 325 000,00</b>
MERSETA VIRO-VENT Bursary	Bursary Support	<b>R630 000,00</b>
<b>TOTAL EXTERNAL FUNDING</b>		<b>R24 580 286,00</b>
<b>TOTAL VUT CONTRIBUTION</b>		<b>R17 535 541,00</b>
<b>RESEARCH FUNDING FOR 2021</b>		<b>R42 115 827,00</b>

## 1.4 VUT RESEARCH ETHICS COMMITTEES

### 1.4.1 Meeting Attendance

Since the establishments of Research Ethics Committees in 2020, the committee have been firm in ensuring fairness and transparency in research processes and procedures. In the past year, we managed to have all 10 CREC formal meetings.

## 1.5 RESEARCH CAPACITY DEVELOPMENT

In 2021, the research directorate continued to support VUT staff to undertake their masters, doctorate and other postgraduate qualifications. In addition, staff of the university were supported to participate in internal and external research development workshops and

conference. Support for staff to undertake these studies and trainings were funded from the University Capacity Development Grants (UCDG) and internal funds.

Under the UCDP, fees of 14 staff were paid in 2021. The 14 staff members also were supported to collect field data and to also see their supervisors. Additionally, 17 academics who have received with doctorates were given seed funding to undertake an approved research initiative within the year. The directorate also organized several workshops on research related issues for staff of the university.

On the VUT Awards, a total number of 20 staff of the university received funding to undertake masters and doctoral studies.

## **1.6 THE DOCTORAL REVIEW IMPROVEMENT PLAN**

Following the findings from The National Review of Doctoral Qualifications 2020/2021 on VUT Doctoral Self Evaluation for the Council of Higher Education, the university was asked to develop an improvement plan for doctoral studies carried out at VUT.

After obtaining inputs from FRIC chairs and faculty professors, a consolidated Doctoral Studies Improvement Plan was finalized and submitted to CHE. The plan covered the Target / Plans & Intervention; Resource Allocation; Milestones; Time Frame; and Progress Status.

## **1.7 REVIEW OF THE RESEARCH ENTITIES**

In 2021, based on the findings and recommendations from the external review of all Research centres and institutes at VUT, the directorate continued to implement selected recommendation from the review. The Framework of the operations of the research entities has been implemented. All research entities have been asked to reapply based on the criteria stated in the Framework policy. A standard application form has also been developed based on the policy.

## **1.8 RESEARCH POLICIES**

The seven (7) research related policies were approved by MANCOM and Senate in 2021. To facilitate the implementation of the policies and ensure accountability, the directorate stated developing implementation plans for the use of the policies. A draft Guidelines for the Implementation of the Research Funding Policy 2021 has been developed so far.

## 1.9 TECHNOLOGY TRANSFER AND INNOVATION (TTI)

The Covid-19 pandemic has highlighted the ability of universities to study and respond to the world's most pressing crises, including as natural disasters, conflicts, and pandemics. Universities across the world used research and innovation to come up with creative ways to respond to the pandemic.

For technology transfer and innovation (TTI), the fiscal year 2021/2022 has been a difficult one. VUT-TTI, through its Technology Station for Materials Processing Technologies (TSMPT-VUT), was hampered and similarly affected by pandemic-induced challenges because to its connection and affiliation to the industrial activities. Furthermore, the TTI experienced several difficulties, including suspension of senior personnel that hampered its ability to meaningfully achieve the strategic goals. In November 2021, Mancom took a resolution to close the Rural Sustainable Development Technology Station based in Upington and the transfer of the Centre for Entrepreneurship & Rapid Incubator (CfERI) from VUT to Sol Plaatjie University was concluded in June 2021.

The activities of the TTI are aligned to the goal 2: increase research productivity with following strategic objectives:

- ✓ Number of patents registered
- ✓ Number of prototypes delivered
- ✓ Number of start-ups incubated
- ✓ Number of accredited training programmes offered (SLPs)
- ✓ Grants received for Science Park activities
- ✓ Income generated from commercialization (excludes grants)

### 1.9.1 Local partnerships

- TTI has established partnership in postgraduate research project collaboration with the University of Johannesburg (UJ), eight Masters students from UJ are utilizing the state-of-the-art equipment at Science Park.
- TTI participates with the following South African universities, University of Johannesburg (UJ), North West University (NWU), Central University of Technology (CUT), and Tshwane University of Technology (TUT) in the Manufacturing, engineering and related services SETA (merSETA) sponsored programme (Viro-vent project).

- Collaborative Programme in Additive Manufacturing (CPAM) – Funded by the Department of Science and Innovation, partnering universities including Vaal University of Technology are University of Johannesburg, University of Cape Town, Stellenbosch University, Central University of Technology and North West University (NWU), and the centre of excellence namely CSIR and industry partner Aerosud.
- Our Technology Station is working in a consortium of technology stations to produce a prototype Bi-level Airway Pressure Ventilator. The consortium funded by MerSETA includes Vaal University of Technology, University of Johannesburg, Central University of Technology, Northwest University and Tshwane University of Technology. Each of the consortium member provides its own infrastructure and expertise from their respective technology station. The design and manufacture of the ventilator will assist in the fight against Covid-19 whilst contributing to human resource development.

### **1.9.2 Sector Education and Training Authority (SETA) Programmes**

SETA Programmes include industrial programmes, workshops and conferences to support 200 individual SMMEs, learners, and community participants. During 2021 only 40 individuals were accommodated in the programmes (30 from merSETA and 10 from Chemical Industry Education and Training Authority (CHIETA).

### **1.9.3 International Collaborative Programmes**

The Directional Composites through Manufacturing Innovation (DiCoMI) project and VUT have been in collaboration since 2019 to integrate advanced manufacturing techniques, composite materials science, and manufacturing system design to develop a novel composites manufacturing system capable of producing low-cost parts with increased accuracy and enhanced functionality.

The research focus is on Directional Fibre-Reinforced Polymer (DFRP) materials and combining different manufacturing techniques into a unique and innovative hybrid system. This project has a direct impact on the European and international scientific fields of composite materials and manufacturing equipment, while supporting the innovation potential in the automotive and aerospace industries. The DiCoMI project has received funding from the H2020 Marie Skłodowska-Curie Action, "Research and Innovation Staff Exchange", supporting the mobility of scientists and engineers in Europe and worldwide.



## 1.10 TECHNOLOGY TRANSFER OFFICE (TTO)

The Technology Transfer Office (TTO) was established with the support of the National Intellectual Property Management Office (NIPMO), to exploit the university's research projects and intellectual property for socio-economic impact to promote regional economic development. This purpose is also achieved by exploiting all commercial opportunities which may arise from within the institution including contract research, and commercial research, amongst others. In this regard, the office assists researchers, students, and community members with the protection, management, and exploitation of Intellectual Property by offering the following services:

- Intellectual Property Services – Conducting Novelty Searches, Drafting & Filing Patent, Trademark & Design registrations, IP Administration.
- Legal Support Services – MOU & MOA, Service Level Agreements, License Agreements.
- Commercialisation and SMME Support Services – Market Analysis, Business Plan Drafting, Company Registration, VAT Registration.

As mentioned above, the VUT was placed under administration during the pandemic. As indicated above, some business units were functionally idle and unable to perform during this period. The TTO is one such unit that was unable to perform optimally during this period. It was against this background that efforts were taken post this period to resuscitate the TTO.

As part of its resuscitation efforts, the TTO has to date done the following:

- Resuscitated relations with NIPMO and sorted out all compliance issues that were outstanding in terms of the university's contractual obligations.
- Re-established relations with some academic faculties and departments within the university.
- Held various intellectual property and commercialisation awareness and scouting campaigns and workshops with faculties and departments.
- Developed the necessary policy documents and frameworks required to govern the intellectual property and commercialization process of the institution and embarked on the process of developing systems and procedures required for the disclosure, protection, and commercialisation of IP.
- Restructured the office to include SMME support in line with the university's strategy of developing and supporting spin-outs.

Resulting from the above, the TTO has noted an increase in the number of IP disclosures submitted and processed. Furthermore, the office has seen an increase in the number of

inventions and commercial opportunities and requests submitted to it. Efforts to resuscitate the TTO are still underway, and more developments will be implemented and announced in due course.

## SECTION 13

# STATEMENT OF THE CFO AND THE CHAIRPERSON OF FINANCE AND INFRASTRUCTURE COMMITTEE OF COUNCIL

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### INTRODUCTION

Fincom operates in terms of its mandate and authority as contained in the Fincom Charter. The Committee operated in accordance with its Charter in 2021. The principal responsibility for systematic sustainability at the Vaal University of Technology (VUT) is the responsibility of all its stakeholders. It is this fact that makes us adhere to a consultative process in operations whereby management, staff members and students interrelate with each other in key areas aligned to the core business of the University.

VUT Management supports and commits to consultative engagements with staff, students, and various external partners to achieve joint goals in taking education further to promote the principles of inclusivity, representatively, and transparency. The University is committed to sound financial management and most decisions are measured in financial terms. In addition, control mechanisms include centralized control over assets, procurement, and the University's bank account. Other financial controls involve quarterly reporting to the Management Committee (MANCOM) and Council, as well as compliance with the approved Policies and Procedures.

### ***Budgeting Process***

The objective of the budget process is to ensure that proper processes and structures in relation to distribution of University resource is aligned, equitable and transparent, thus supporting the core business strategies of the VUT. Management views the budget process as a serious and significant annual event that has vast implications on the business continuity of the Institution. This process at the VUT is an interactive process whereby different levels of management take ownership of their budgets and participate actively in compiling the budget for the next year, considering the trends of the past as well as future goals.

The Budget Committee (with representatives from Finance, Faculties, Planning unit, Sites of delivery, IT, and, HR) oversees the budget process of the University. It recommends the

budget to the MANCOM which assesses and further recommends it to Finance Committee and Council for approval.

The MANCOM approved the budget parameters before the Budget Committee started with the budget process. The Budget Committee, as mandated by the MANCOM, ensured that the appropriate allocations within the available resources were considered and the Committee ensured that the core business of teaching, learning, and research improve through the budget provision. The following parameters were considered:

- All contractual increases as per contract agreements;
- Departments were requested to use a zero-based budgeting approach so requests were detailed and fully motivated;
- Provision for new/replacement teaching and instructional equipment in the academic sector;
- Certain line items were not permitted due to COVID-19 pandemic;
- Limited new furniture and equipment for new offices only, whilst a provision is made for the replacement of obsolete capital items of existing employees; and
- Staff cost as a percentage of income.

A rigorous process was followed with the participation of the various Departments and Faculties in the development of the final budget. The allocation of funds is guided by strict methodology which is premised on prioritizing the objectives set out in the Annual Performance Plan. The total budgeted income for 2021 exceeded the total budgeted expenses by only R2.9 million, which is basically break-even. This is a move on the right direction after a deficit budget for the previous four years. Management is working on recovery strategies. MANCOM is mindful of the financial situation in the Sector and it is therefore aware that such interventions or recovery measures may take longer as the system improves.

### ***Overview of financial results***

The 2021 VUT financial results are affected by significant economic challenges which has been worsened by the COVID-19 pandemic. The financial effects on the University resulted in an increase to financial risks faced by VUT due to the following challenges:

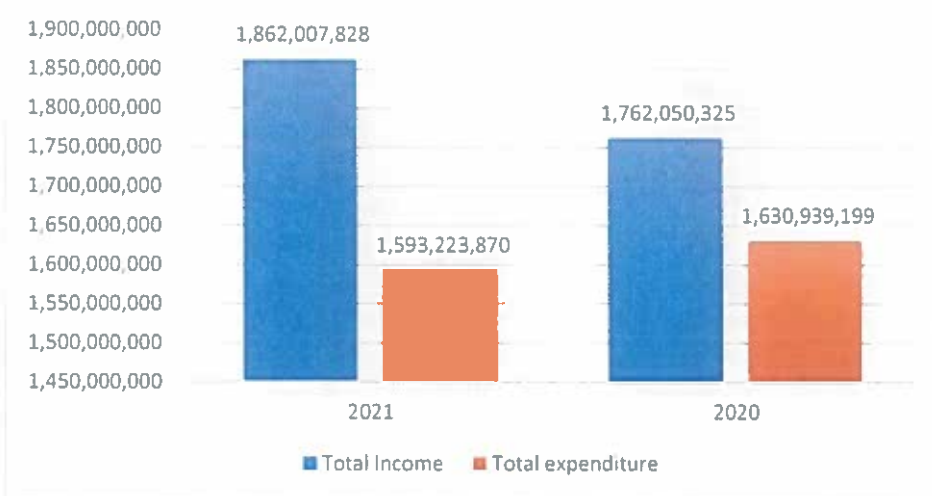
- Reduction in Block Grant and Infrastructure Grant;

- The uncertainty of first-time enrolments for 2022;

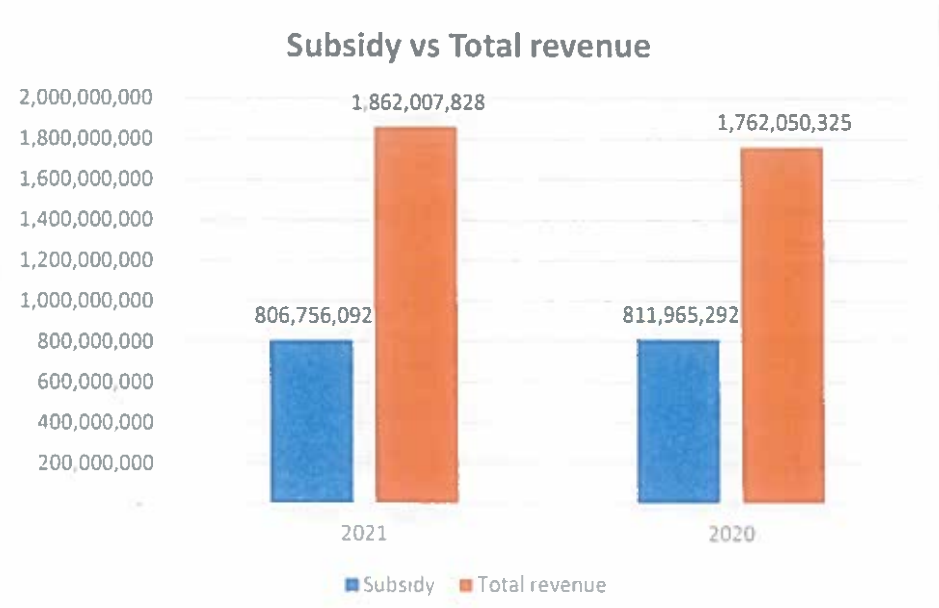
While there is a significant threat to total income, the university is still facing similar expenditure costs, especially personnel costs. The situation was worsened by Covid 19 expenditure. The DHET provided a relief fund for Covid 19 expenditure in 2020, however, the university had to carry this cost in 2021.

The total consolidated income of the University increased by 6% to R1,862 million (2020: R 1 762, 1 million) while the total expenses decreased by 2% to R1,593.2 million for the financial year 2021 (2020: 1 630,9 million). The surplus for the university's operations is R283.8 million for the current year (2020: R168.9 million) and the budgeted surplus is R2.9 million. The significant surplus is due to the realization of income that is much higher than the budget, the austerity measures introduced, and the strict control of personnel costs. The acquisition of own student housing in 2020 has assisted in improving the income and the University needs to improve on third stream income initiatives.

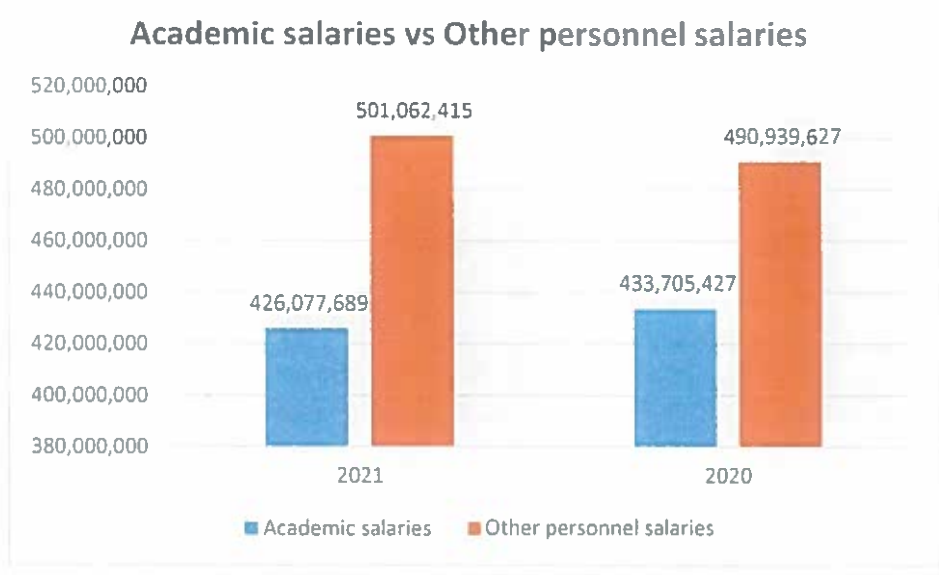
**Total income vs Total expenditure**



Personnel costs is 50% (2020: 52%) of the total income meaning that this category of expense needs to be seriously contained before it adversely affects the University operations and the sustainability of the institution. Comparatively this ratio looks like there is an improvement but that is not the situation because university had 223 vacant positions amounting to R151,7 million and the university made use of contracts which were not replacing vacant positions. The reorganization of the structure will assist in controlling this cost. The insourcing of security personnel in 2022 will increase this line item but should improve the total operational expenses of the institution.

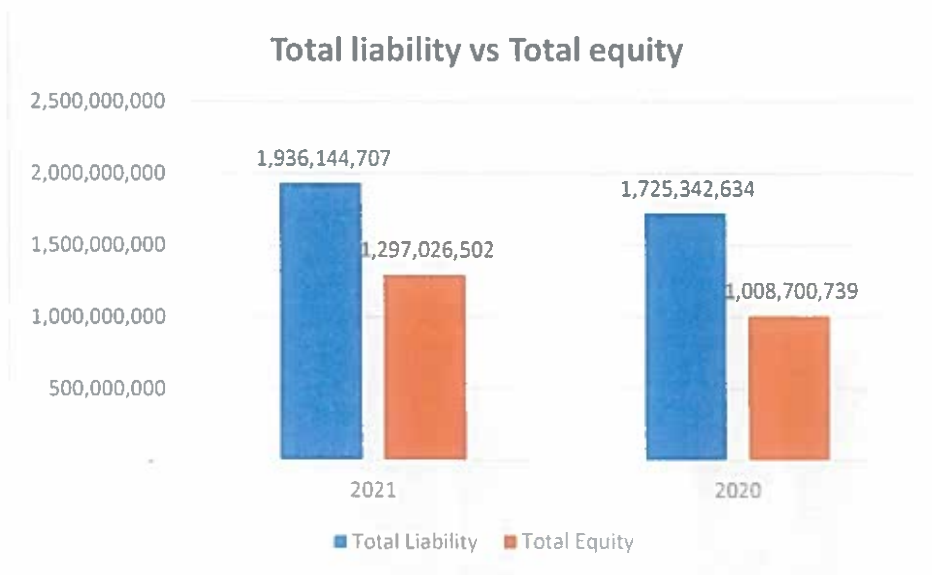


The total income of the university is still largely dependent on the government subsidy at 43% of total income (2020: 46%)



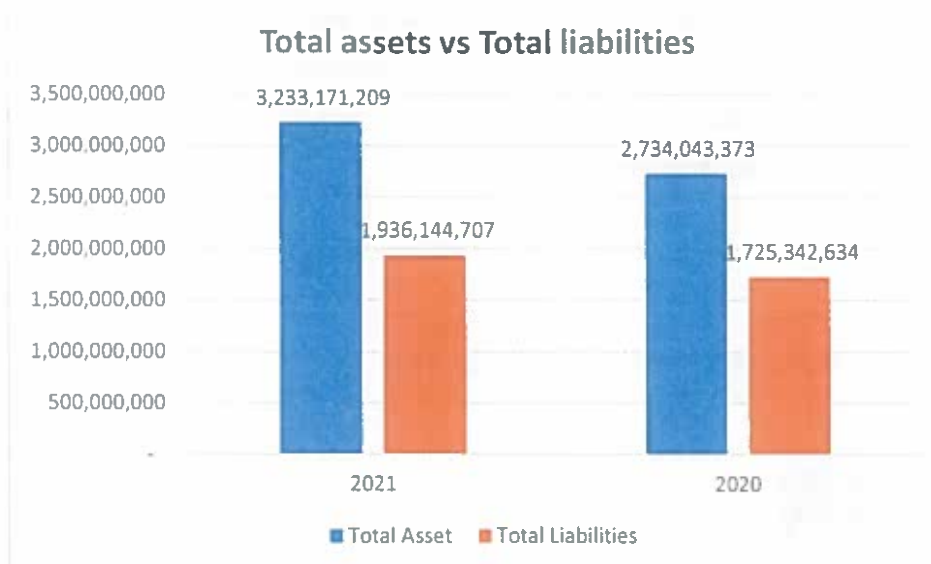
**Solvency**

This is a measure of the ability of the University to meet its long-term debts.



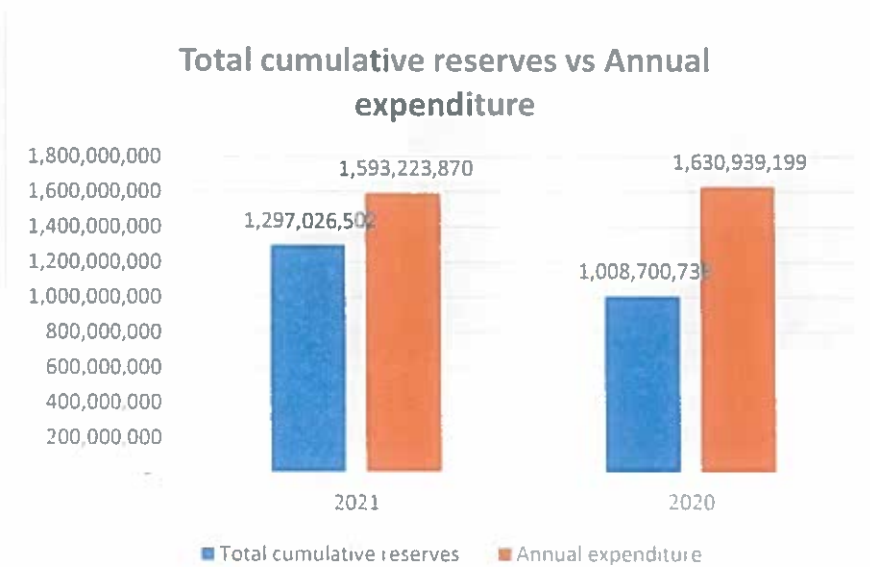
The total liabilities (R1, 936 million) expressed over accumulated reserves.

(R1, 297 million) indicate the university's ratio of debt to equity as 1.49 (2020: 1.71). This ratio has slightly improved compared to the previous year, however, total liabilities are still higher than equity due to unspent funding from DHET and the situation needs to be improved.



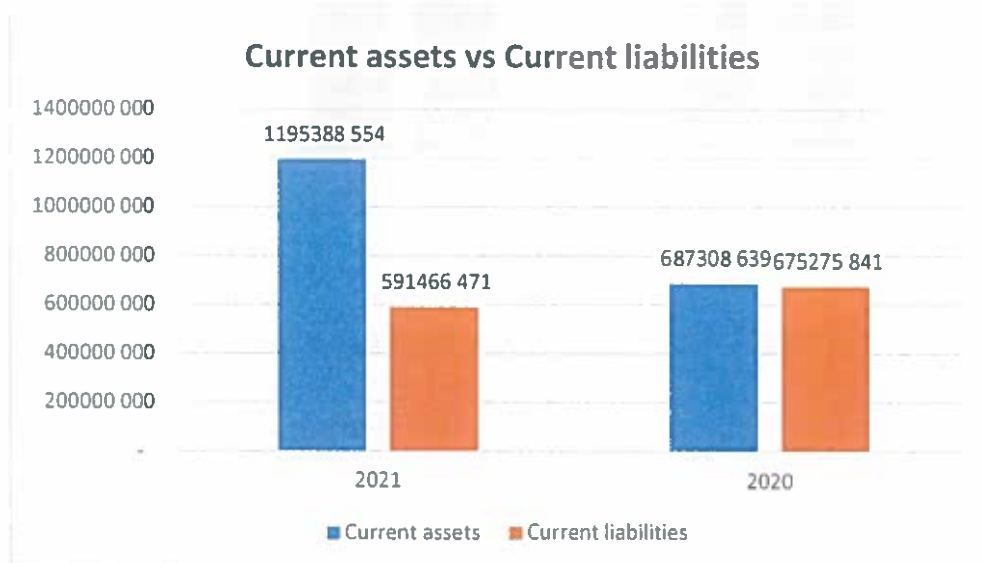
Total assets increased by R499.1 million while the total liabilities increased by R210.8 million in the current year.

## Sustainability



The ratio of total cumulative reserves over annual expenditure is 0.81 in the current year (2020: 0.62). This ratio indicates the ability for an institution to continue in operation without new funding in the next financial year. A trend of a higher than 1 ratio signifies a viable institution while below 1 means may not cover the following year's expenses without new funding. The university is in the process of developing financial sustainability which will include turnaround strategy of the current financial situation and growth in the outer years. VUT hopes to normalise the situation after 2 years.

## Liquidity





The current ratio determines the extent to which current liabilities are covered by current assets. This ratio indicates that the University's current liabilities are less than current assets, the ratio is 2,02 times for 2021 (2020:1,02 times). This normalisation in the ratio is due to an increase in current assets while the current liabilities decreased during the same period. Significant movement in assets is due to an increase in cash and cash equivalent.

### ***Student Debt***

Student debt remains one of the greatest financial concerns for the Institution as it has a significant impact on the financial sustainability and cash focus of the Institution in the long term. The student debt decreased from R456.7 million to R405.3 million (11%) during the current year, compared to an increase of 28% in the previous year. The movement is due to a significant write-off in the previous year.

### ***Access to Financial Aid***

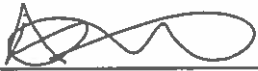
The majority of Vaal University of Technology students are from disadvantaged families and this situation has placed pressure on the financial resources of the University. The biggest source of funding for students is NSFAS. The University also provides various forms of financial assistance to deserving students. A total of R28 million was allocated to needy students, this amount includes the gap grant for missing middle students. VUT is also actively involved with other private bursary providers to obtain more resources to assist students.

The University is working on a financial strategy aimed at creating a financially stable and sustainable environment for the institution. This strategy will be finalised in the year 2022.

### ***Conclusion***

In general, the financial situation of the University needs to be improved further in order to ensure the long-term sustainability of the institution. Through sound financial management, planning, and reporting, supported by ethical financial practices, the University can improve on the achievement of the current year and strives to be a financially stable and sustainable Institution.

The University endeavours to achieve this through constant monitoring of developments in the sector and the financial position of the University now that the institution is out of the administration period.



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Mr SA Mahlalela

**Chairperson: FINCOM**



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Ms. NR Mgobo (CA) SA

**Chief Financial Officer**

## SECTION 14

### STATEMENT OF THE CHAIRPERSON OF THE AUDIT AND RISK COMMITTEE OF COUNCIL

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The Vaal University of Technology (VUT) strives to manage and maintain systems of internal controls to provide reasonable assurance to University Council, through the Management Committee (Mancom) and Audit and Risk Committee (ARC) of the council. Such controls support an operational environment that promotes the safeguarding of University assets, the preparation, and communication of reliable financial information.

The University was under Administration for the first seven months of the year therefore Audit and Risk Committee was not in existence for most of the 2021 financial year. The Audit and Risk Committee was constituted in the last quarter of the year and had only one sitting in 2021 that was attended by all members.

#### ***Audit and Risk Committee Charter***

The audit and Risk Committee has adopted a formal charter which was approved by Council in November/December 2021. The overall objective of the Audit and Risk Committee Charter is to assist the University Council in fulfilling its governance and oversight responsibilities i.e.:

- Planning and reporting
- Risk Management
- Finance and resources; and
- Audit process.
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#### **The Audit and Risk Committee membership and meetings**

The Audit and Risk Committee of Council, whose Chairperson is an external member of Council was established in terms of the Higher Education Act, 1997 (as amended). The constituencies of the external members include appointees from Chamber of Commerce/Business, Donors and the Convocation, who are independent of the University's executive management.

**The Charter specifies the Composition of the Committee as:**

- Four external members of Council;
- The Vice-Chancellor and Principal;
- The Deputy Vice-Chancellor responsible for finances;
- The Chief Financial Officer;
- The Secretary to the Committee is the Registrar;
- The Internal and External Auditors (on advisory and expert capacity); and
- Office of the Auditor-General (on advisory and expert capacity).

The ARC was established in the last quarter of the year therefore it had only one meeting and it was attended by all members.

***Financial Management and Internal Controls***

Organisational policies and procedures, structures and values are some of the controls implemented by Management. The initiatives taken by Management to improve the control environment are ongoing and will continue into the future. Information systems and internal controls are audited by external and internal auditors on an annual basis.

Management is responsible for implementing internal and transparent financial management controls which include information systems on financial and operational matters, compliance and sustainability issues. Financial management reports are compiled quarterly and discussed by a properly constituted Mancom that meet at least twice every month (ARC from last quarter and will meet quarterly) to deliberate on the following:

- Risk management-related governance frameworks;
- Review/approval of external and internal audit plans, findings, reports and fees;
- Senate Reports and requests pertaining academic matters;
- Annual Report and quarterly report;
- Information Technology Report;
- OHS Report;
- Compliance with the Code of Corporate Practises and Conduct, and
- Compliance with Higher Education Institution's Code of Ethics.

The ARC serves both Management and Council and evaluates the response on the abilities and duties of the external and internal auditors, by ensuring that all major findings reported on have been satisfactory resolved and that corrective measures are taken to address deficiencies.

The auditors have unrestricted access to the financial records of the Institution and the ARC should ensure that their independence is not impaired.

### ***Internal Audit Function***

The role of the Internal Auditors (BDO PS Advisory (Pty) Ltd) is to provide independent assurance on the adequacy and effectiveness of the internal control systems, as well as financial controls on an ongoing basis. The University makes use of an outsourced internal audit function and they were appointed in 2018 for three (3) years. ARC approves the Internal Audit Plan on an annual basis. Internal auditors adjust its planning accordingly to ensure that the testing of controls is directed in areas where risk has been identified. ARC reviews audit reports as part of the oversight role in terms of evaluating the effectiveness of processes and controls. Based on the work performed by Internal auditors, internal control systems and financial controls are effective.

### ***External Audit Function***

The role of the External Auditors (Ngubane and Co. Chartered Accountants Auditors) is to provide an opinion on the financial statements prepared in accordance with International Financial Reporting Standards (IFRS) and the requirements of the Higher Education Act of South Africa. The external audit opinion is based on executing an audit in accordance with the Public Audit Act of South Africa, the General Notice issued in terms thereof, and International Standards on Auditing (ISAs).

In accordance with the Public Audit Act of South Africa (PAA), and the General Notice issued in terms thereof, the External Auditors are required to report findings relevant to the reported performance against predetermined objectives, compliance with laws and regulations as well as internal control.

External Audit conducts its audits in terms of the risk-based External Audit Plan recommended by Management and approved by the Council for the year ending 31 December 2021.

The external auditors were appointed in April 2020 for 5 years' subject to annual concurrence from Auditor General.

### ***Combined Assurance***

Although there is no formal combined assurance model, all assurance providers have a healthy working relationship. This entails continuous sharing and collaboration with the aim of ensuring full coverage.

***Financial Statements***

The Financial Statements are compiled by Management in accordance with International Financial Reporting Standards (IFRS) and in the manner required by the Minister of Higher Education and Training in terms of Section 41 of the Higher Education Act, 1997 (Act 101 of 1997). An unqualified audit opinion for 2020 was issued by the external auditors.



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Ms. Clarinda Simpson  
**Chairperson: Audit and Risk Committee**