MAKERERE UNIVERSITY

College of Engineering, Design, Art and Technology (CEDAT)

Undergraduate

HANDBOOK

2011 - 2013

www.cedat.mak.ac.ug

Contents

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Message from the **Principal**

Congratulations on your decision to undertake undergraduate studies at Makerere University, College of Engineering, Design, Art & Technology (CEDAT), and welcome to CEDAT community! I hope you find your time at CEDAT rewarding, challenging and exciting.

The College of Engineering, Design, Art and Technology (CEDAT) was formed from a merger of two academic units: former Faculty of Technology (FOT) and Margaret Trowell School of Industrial and Fine Arts (MTSIFA). This academic cooperation springs from the practical-based teaching and learning methods in FOT and MTSIFA which emphasize creativity and innovation aimed at solving societal problems. The technological advancement in the twenty-first century has further reduced the gap between art, design and technology, which more than ever before, calls for interdisciplinary pedagogical approaches between the artists, designers, architects, surveyors, construction managers and engineers.

In line with the University's strategy, the College has steadily moved from traditional classroom teaching to more learner centred pedagogy, which stresses research and innovation. We encourage our students to be innovative and search for solutions to problems that afflict our society. Our academic staff are also engaged in intensive research and innovation. This is why the college has come to be known as the home of innovation. The college has found itself at the vanguard of technological, art and design advancement while staying relevant to the needs of the society. Our research and innovative capacity has helped attract support from the government and development partners. The quality of our graduates has inspired collaborations with different universities, communities and companies.

In our quest of keeping abreast with the rapid technological changes in the disciplines under our mandate to foster quality education with a global perspective, our curricula are revised every 3 years. In addition, our Programmes have been carefully designed to ensure that each CEDAT student is well prepared for the work environment of the 21st century. CEDAT courses help students become specialists in fields of Engineering, Architecture and Physical Planning, Construction Management, Land Economics, Surveying and Geomatics, Design and Art among others.

CEDAT is devoted to providing its students with a high quality experience that is distinctive within the higher education sector. It is committed to listening to what students want from their time at CEDAT. The academic staff, many of whom are international authorities in their specializations, provide invaluable input in terms of course content and delivery - equipping the graduates with enterprising, creative and innovative skills necessary for the global market and that can respond to the ever changing global society needs.

Last but not least, CEDAT has excellent facilities to enable teaching and learning such as Conference Halls/Lecture Theatres; spaciousLecture Rooms; Design and Art Studios; Offices; computer Laboratories, Research laboratories; Exhibition gallery and a well stocked Library. We also boast of several collaborations with public and private institutions at both local and international levels.

I wish you all the very best for your time at CEDAT.

Assoc. Prof. Barnabas Nawangwe

Makerere University's vision is to be the leading institution for academic excellence and innovations in Africa and CEDAT identifies with this vision.

Mission Statement

CEDAT mission is to undertake high quality research relevant to the region's and global development needs and consequently produce highly qualified graduates with specialized skills but equipped with holistic knowledge, as well as professional services and innovation for sustainable national and regional development.

About the Handbook

This Student Handbook contains essential information for new and continuing undergraduate students. It describes the range of undergraduate programmes offered by the College of Engineering, Design, Art and Technology and other information considered relevant to the students in enabling them plan for their study.

The handbook gives the details of qualifications/prerequisite for the courses, students' regulations as well as the details of the fees structure. Therefore, it is of great importance that continuing and prospective students study this book with care for the purposes of mastering the University regulations and other issues pertaining to the programmes offered. The College of Engineering, Design, Art and Technology takes pride in offering the best Art, Design and Technology services, quality teaching and research and it is our joy that you find this handbook helpful as far as studying at CEDAT is concerned.

Although the book contains course outlines for the programmes offered, the detailed course content is not included but can be accessed online together with admission requirements for each of the programmes.

Further note that the curricula contained herein took effect from 2010/2011 academic year.

About CEDAT

1

Introduction

The College of Engineering, Design, Art and Technology (CEDAT) is one of the nine colleges of Makerere University and one school that make up the academic units at Makerere University. The creation of CEDAT was a result of the major reforms in Makerere University's governance, financial and administrative structures, as well as academic programmes. The decision to transform Makerere University into a Collegiate University was reached by Makerere University Council on 17th December 2010 following an earlier recommendation by the Senate meeting held on 4th November 2010. The University Council together with the University Senate observed that Makerere University had become too big to be managed at the Centre. There was a need to divide functions between the central administration of the university and viable constituent colleges. Restructuring of the academic units into constituent colleges is aimed at improving service delivery, reducing the red tape in the management of the university's affairs and enhancing quality in the core functions of the university.

CEDAT is comprised of three Schools and each of these has 3 academic departments: Margaret Trowell School of Industrial and Fine Arts (MTSIFA) with the following departments: Department of Fine Art, Department of Industrial Art & Applied Design and Department of Visual Communication Design and Multimedia; School of Engineering (SOE) has the Department of Civil and Environmental Engineering, Department of Electrical & Computer Engineering and Department of Mechanical Engineering; and School of the Built Environment (SBE) has Department of Architecture and Physical Planning, Department of Construction Economics and Management and the Department of Geomatics and Land Management. CEDAT also has an institute of Heritage Conservation and Restoration and four centres which are the base for service and knowledge-transfer partnerships: Centre for Research in Energy and Energy Conservation (CREEC), Centre for Research in Transportation Technologies, Centre for Technology Design and Development and Centre for Geographical Information Systems (GIS).

Staff and Student Population: As of the academic year 2010/2011 CEDAT has a student population of 2,892 of whom 2,652 are undergraduates; academic staff population of 160; administrative and support staff population of 95 members and is housed in approximately 20,000 sq m of space.

Physical Location: The College has 2 locations: MTSIFA is located at the South wing of the Campus, while the Administration, SOE, SBE are located at the Northwest wing of the Campus. The two wings are connected by a 'CEDAT' road called Mary Stuart Road (Technology Road).

Undergraduate Academic Programmes offered at CEDAT

Department	Undergraduate Programmes Offered
	B. Industrial and Fine Art**
Industrial Art and Applied Design	B. Industrial Art and Applied Design**
Visual Communication and Multi-media	B. Visual Communication Design**
Fine Art	B. Fine Art**
Civil and Environmental Engineering	BSc. Civil Engineering Diploma in Civil Engineering Surveying
Electrical and Computer Engineering	BSc. Electrical Engineering BSc. Computer Engineering BSc. Telecommunication Engineering
Mechanical Engineering	BSc. Mechanical Engineering
Architecture and Physical Planning	B. Architecture B. Urban & Regional Planning
Construction Economics and Management	BSc. Construction Management BSc. Land Economics BSc. Quantity Surveying
Geomatics and Land Management	BSc. in Land Surveying and Geomatics (replaces BSc Surveying)

Notes: ** Bachelor of Industrial and Fine Art is run centrally by MTSIFA. ** the three programmes have been proposed to begin in 2012/2013 academic year.*

2

General Academic Information

2.0 GENERAL ACADEMIC INFORMATION FOR THE STUDENTS

Studies and examinations for undergraduate Programmes in the College of Engineering, Design, Art & Technology shall be governed by the general regulations statutes of Makerere University.

2.1 Application procedures

Information for Prospective Students-Ugandans

Application forms and other relevant information may be obtained from undergraduate Admissions Office level 3, Senate building, Makerere University. Application fee of 50,000/= (for Ugandan Applicant) and a bank charge is paid in any DFCU bank and Stanbic Bank branches using Makerere University pay-in slip/ bank slips. Applicants fill in four copies of pay-in slips and after paying they present a copy when they are submitting the completed application forms to the admissions office, Makerere University. All applications for diplomas have to satisfy the requirements of the relevant programmes and the University regulations.

Unless otherwise stated, all applications from private sponsorships are made in May of each academic year. The closing date for receiving applications is end of the same month of the year in which the admission is sought. All completed application forms must be accompanied by relevant copies of academic documents. Mature Age Entry Scheme examinations are administered in the month of December preceding the year in which admission is sought.

Information for Prospective Students-International

Application forms from International students together with relevant academic documents and the application fee of $75 /equivalent /= should be submitted to the Admissions Office not later than 31st March of the year in which admission is sought.

Note: Candidates from countries where the language of instruction is not English are required to supply evidence of Proficiency in English. Residing Foreign Applicants may however sit an English proficiency test conducted by Makerere University.

Application forms can be downloaded from (http://www.mak.ac.ug). International applicants should contact Makerere University Academic Registrar's Department for application forms and more information at ar@acadreg.mak.ac.ug. Please provide your e-mail and fax addresses for ease of transmission of these forms where applicable.

2.2 Registration

For a candidate to be a full student of the University he/she must be registered. Registration is a mandatory function of the University and the College and must be done within six (6) weeks from the beginning of the semester by every student. Registration centre is under the supervision of the College Registrar at the College premises who produces and displays detailed registration programmes. Students are advised to use names that appear on their admissions letters, and these should be the names that appear on O' Level and A' Level results slips, Diploma Transcripts etc. The registration requirements are indicated on the admission letter and freshers' joining instructions.

2.3 Accepting or Declining a Place of Offer

a) Any first year student who will not have registered with in the first six (6) weeks of the beginning of the academic year shall be deemed to have declined the offer of a place at the University as well as the College. His/her place shall accordingly be offered to another student through the change of programme.

b) Any students in the first year of studies, who for some reasons are unable to register or take up his /her place in the University by the end of the registration period, are advised to re-apply again for admission in the following academic year by following the same application procedures. Please note that you need to re-apply for admission and complete afresh with the applicants for that academic year.

2.4 Withdrawal

c) A registered student must apply to the Board of the College/ School for permission to withdraw from studies at anytime of the semester. Reasons for withdrawal should be given in the letter of application. A student will be allowed only a maximum of two (2) withdrawals in an academic Programme and each withdrawal shall be a maximum of one academic year.

d) Permission to withdraw shall be granted by the College/ School Board only on compassionate grounds or in cases of illness or financial constraints, serious social or domestic difficulties or exceptional professional commitment which can be demonstrated to have adverse effected on the candidate's study.

e) A student who had withdrawn from studies shall apply to his/her respective College/ School Board to resume studies and shall indicate that the circumstances that made him/her withdraw can no longer affect his/her studies.

f) A student who has overstayed on an academic programme by more than 2 (two) years beyond the period of candidature stipulated in the programme shall be discontinued from his/her studies at the university.

2.5 Fees and Other Requirements

Before applying, applicants are advised to make sure that they have adequate financial support to cover tuition and functional fees as well as other requirements. Fees do not cover research and accommodation expenses. An acceptable guarantee of financial support throughout the proposed course is necessary.

2.6 Payment of Fees

g) All fees (Tuition and other University fees) are payable

in full at the beginning of the Academic year or in two installments at the beginning of each semester.

h) A first year privately-sponsored student who fails to pay all first semester fees in full by the end of the second week of the beginning of an academic year shall forfeit his place in the university.

i) Continuing privately –sponsored students who cannot pay full fees at the beginning of the academic year are required to pay at least 60% of the Course Load, if they wish, by the set deadline (6th week of the semester). A continuing privately sponsored student who shall not have paid fees by the end of the sixth week shall be deregistered.

j) A privately-sponsored student who shall not have completed paying fees by the end of the 6th week will not be allowed to sit for University tests and examinations.

k) Only registered students will be allowed to use University facilities, to attend lecturers, do Coursework and sit for University End of Semester Examinations.

l) The University Council reserves the right to vary fees chargeable anytime with or without prior notice.

m) International Students are advised to pay fees in Uganda Shillings.

n) Other requirements like books, stationery, and materials, accommodation, food, research expenses, etc, the sponsor should pay it directly to the student.

2.7 Mode of payment

o) University fees MUST be paid to DFCU Bank Makerere or any Stanbic Bank Ltd Branch and using pay-in/Deposit slips, and clearly marking the item(s) being paid for. It is, therefore advisable that students open Accounts with any of the above banks to ease transaction. Pay-in/Deposit slips are obtainable from the University Bursar's office or Senate Building; Room 202. Students' numbers and registration numbers must be used in all payments of the University fees.

p) Fees can also be paid by Electronic Funds Transfer (EFT) money transfer to Makerere University Council Account Number – 0140018673101 Stanbic Bank Makerere Branch.

q) University fees (i.e. Registration, Examination, Library, Research, Development, Internship, and Technology others like Rules &Caution, academic gown, NCHE fee and Tuition) MUST be paid to the University before registration. Graduation, Certificate, Convocation and Academic Transcript fees will be paid on completion of the course.

r) Payment of fees may be made in Lump Sum on arrival or in installments (per Semester) by using the student numbers to pay in the Bank.

s) Payments can also be made by Bank Drafts in the names of Makerere University council.

t) Students are required to present copies of the pay-in slips to College Bursa's Office (Room 5008 Technology new building) to get their financial statements.

u) Sponsors/Parents/Guardians are advised to avoid giving lots of money to students but to pay fees directly to the banks indicated under (a) above.

v) Enquiries on payment of fees should be done from the office of the University Bursar in the Main administration Building or from the office the College Bursar.

2.6 Refund of Tuition fees when a student has withdrawn from studies

A registered student who has been permitted to withdraw from studies shall be refunded the Tuition fees for the semester paid according to the following schedules:

The time at which a student has withdrawn in a Semester	Percentage of paid Tuition to be Refunded
(a) By the end of the First week of a Semester	100%
(b) By the end of the Second week of a Semester	80%
(c) By the end of the Third week of a Semester	60%
(d) By the end of the Fourth week of a semester	40%
(e) By the end of the Fifth week of a semester	20%
(f) After the fifth week	0%

Note: *Fees for Residence, Application, College Requirements, Registration, Examinations, Identity Cards, Library, and Guild Charges are not refunded.*

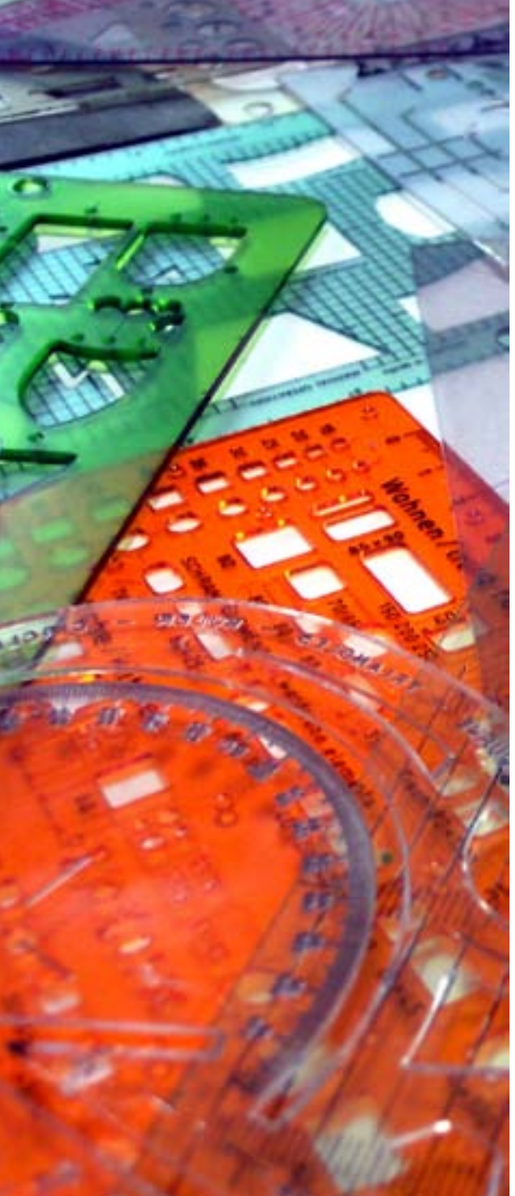
2.7 Fees structure (2011/2012)

a. Tuition Fees for CEDAT programmes per Semester

SN	SCHOOL OF BUILT ENVIRONMENT	Tuition for Ugandans	Tuition for Internationals
a)	Bachelor of Architecture	1,155,000=	1,785,000=
b)	BSc. in Quantity Surveying	1,155,000=	1,785,000=
c)	BSc. in Land Economics	1,155,000=	1,785,000=
d)	BSc. in Construction Management	1,155,000=	1,785,000=
e)	BSc. in Land Surveying and Geomatics	1,155,000=	1,785,000=
f)	Bachelor of Urban & Regional Planning	700,000=	1,050,000=
	SCHOOL OF ENGINEERING		
a)	BSc. in Civil Engineering	1,155,000=	1,785,000=
b)	BSc. in Electrical Engineering	1,155,000=	1,785,000=
c)	BSc. in Mechanical Engineering	1,155,000=	1,785,000=
d)	BSc. in Telecommunication Engineering	1,155,000=	1,785,000=
e)	BSc. in Computer Engineering	1,250,000=	2,020,000=
f)	Diploma in Civil Engineering Surveying	1,050,000=	1,400,000=
	MTSIFA		
a)	Bachelor of Industrial & Fine Art	840,000=	1,260,000=

b. Functional fees (payable to the University)

Item	Ugandans UGX	Non-Ugandans UGX	Period
Registration Fee	100,000	202,000	Per year
Examination Fee	100,000	303,000	Per year
Library Fee	20,000	40,400	Per year
Development Fee	123,500	222,200	Per year
Contribution towards Research Fund	20,000	40,400	Per year
Technology Fee	50,000	101,000	Per year
Internship Fee	100,000	100,000	Per sem



University Identity card	15,000	40,400	
Rules and Caution	2,000	2,000	
Academic Gown	16,000	16,000	

c. Other fees (payable to the university)

Application Fee	**50,000**	$75/ Equivalent	Payable at the time of Application
Late Registration (surcharge)Fee	**50,000**	101,000	
Accommodation	**220,000**	600,000	Per semester
Certification fee	**3,000**	20,200	Per copy
Re-Examination Fee	**20,000**	40,400	Per course
Graduation Fee	**30,000**	101,000	On graduation
Convocation Fee	**10,000**	20,200	On graduation
Certificate Fee	**20,000**	101,000	On graduation
Transcript fee	**20,000**	101,000	On graduation
Verification fee	**50,000**	$75/ Equivalent	On request

3 Conduct of Programmes/ Courses

3.0 CONDUCT OF PROGRAMMES/COURSES

3.1 Definition of an Academic Programme and a Course

3.1.1 Academic Programmes

Each Academic Programme shall be defined by Courses. An Academic Programme shall be composed of a set of prescribed Courses that shall be registered for by a student in order for him/her to qualify for the Award of a particular Degree/Diploma/Certificate.

3.1.2 A Course

A Course is a unit of work in a particular Field/area of a study normally extending through one Semester the completion of which normally carries credit towards the fulfillment of the requirements of certain Degrees, Diploma, or certificates.

3.1.3 A Contact Hour

A contact hour is equivalent to One (1) hour of lecture/Clinical or Two (2) Hours of Tutorial/Practical or four (4) hours Fieldwork.

3.1.4 A Credit or Credit Unit

A Credit or Credit Unit is the measure used to reflect the relevant weight of a given Course towards the fulfilment of appropriate Degree, Diploma, Certificate or other programmes required. One (1) Credit Unit shall be One (1) Contact Hour per Week per Semester or a series of fifteen (15) Contact Hours.

3.2 Categorizing Courses

Courses are categorized as Core, Elective, Pre-requisite or Audited. Not all Courses in an Academic programme are made Core. The Courses of the first year studies are called pre-requisite or introductory courses. The number of elective Courses that each student shall be required to register for in every undergraduate Academic Programme shall always be stated so as to guide the students when they are choosing them from a particular Elective Course. Courses in the Programmes shall be categorized as follows:-

a) **A Core Course**

This is one which is essential to an Academic Programme and gives the Academic programme its unique feature. Everyone offering that particular academic programme must pass that Course. Core Courses shall be offered in all the Semesters.

b) **An Elective Course**

This is one which is offered in order to broaden an Academic Programme or to allow for specialization. It is chosen from a given group of courses largely at the convenience of the student. Another Elective Course may be substituted for a failed Elective course.

c) **An Audited Course**

This is one which is offered by a student for which a credit/credit Unit shall not be awarded.

d) **A Pre-requisite Course**

A pre-requisite is a condition (either Course of Classification), which has to be satisfied prior to enrolling for the course in question.

A pre-requisite course therefore is a Course offered in preparation for a higher level Course in the same area of study.

3.3 Semester Course Load

Semester Load shall be the total number of Courses for a particular Academic Programme offered in a Semester. The Courses to be Retaken and those to be Audited shall be within the Maximum semester Load of every student.

3.3.1 Normal Semester Load

The normal semester Load for undergraduate academic programmes range from Fifteen (15) Credit units to Twenty-One (21) Credit Units. A full time student shall not carry less than 15 Credit Units and not more than 21 Credit Units per semester.

3.3.2 Maximum Semester Load

The maximum Semester Load for Undergraduate Academic Programmes is Twenty-eight (28) Credit Units so as to cater for students who have Courses to retake/audit or those who would be able to complete the requirements for their respective Academic Awards in less than the stipulated minimum duration.

3.4 Assessment of Courses

Each course shall be assessed in two (2) parts as follows:

a) The Coursework (Progressive/ Continuous Assessment), shall contribute 40% of the Total Marks.

b) The Coursework (Progressive/Continuous Assessment) Component shall consist of at least One (1) test and One (1) Homework/Take-Home Assignment OR Two (2) Tests per Course.

c) A minimum of two coursework assignments/tests shall be required per course.

d) The University Examinations shall contribute a maximum of 60% of the Total Marks.

e) For practical courses (industrial/field training) assessment shall be by assignment and or a report form.

Note: Coursework is also a University examination, copying and /handing in coursework similar to another student's work, or hiring another person to do one's coursework is an examination malpractice that will lead to dismissal from the University.

3.5 Certificate of Due Performance

i. A student who fails to honor the deadline set for handing in assignment without justifiable cause(s) shall receive a score of a zero or fail grade in that assignment.

ii. A student who does not have coursework marks shall be denied Certificate of Due performance and will not be allowed to sit the University Examinations.

3.6 Progression of Students

Progression of a student shall be classified as Normal, Probationary or Discontinuation

3.6.1 Normal Progress

Normal Progress shall occur when a student has passed assessments in all the Courses he/she had registered for in a particular semester and not when he/she passed the Assessments in the Core Courses only.

3.6.2 Probationary Progress

A student who has obtained the Cumulative Grade Point Average (CGPA) of less than 2.0 shall be placed on probation. Such a student shall be allowed to progress to the next Semester/Academic Year but shall still retake the Course(s) he/she had failed the Assessments in later on and obtain at least the Pass mark (50%) in the Course(s).

3.7 Discontinuation

a) When a student accumulates three consecutive probations based on CGPA he/she shall be discontinued.

b) A student who has failed to obtain at least the Pass Mark (50%) during the Third Assessment in the same Course or Courses he/she had retaken shall be discontinued from his/her studies at the University;

c) A student who has overstayed in an Academic programme by more than Two (2) Years shall be discontinued from his/her studies at the University.

3.8 Re-taking a course

a) A student shall retake a Course when he/she is given another offer in order to obtain at least the Pass Mark (50%) if he/she had failed during the first Assessment in the Course or Courses. A student who has failed to obtain at least the Pass Mark (50%) during the Second Assessment in the same Course he/she has retaken shall receive a warning.

b) A student may retake a Course or Courses when next offered again in order to improve his/her Pass Grade(s) if the Pass Grade(s) for at the first Assessment in the Course or Courses were low. A student who fails to attain higher marks after retaking to improve, the examination results of the first sitting are recorded as Retake.

c) Where a student misses to sit examinations for justified reasons; the grades obtained after sitting examination shall not be recorded as a retake because the candidate is sitting the examinations for the first attempt.

d) While retaking a course or Courses, a student shall; attend all the prescribed lectures/tutorials/ practical in the course; satisfy all the requirements for the Coursework Component in the Course; and sit for the University Examinations in the Course

e) A student shall not be allowed to accumulate more than five (5) Retake Courses at a time. Students are required to register for retake course(s) first before registering for new courses offered in that semester and the retake courses should fit into the approved normal load to avoid time table clash.

f) A final year student whose final examination Results have already been classified by the relevant school Board and has qualified for the Award of a degree/Diploma/ Certificate, shall not be permitted to retake any course.

g) When a student has retaken a course, the better of the two Grades he/she has obtained in that Courses shall be used in the computation of his/her Cumulative Grade Average (CGPA). Whenever a Course has been retaken, the Academic Transcript shall indicate it accordingly.

h) Students who have a course(s) to retake and these Course(s) fall beyond the set normal semester load for their Academic programmes shall pay tuition fees for any Course/Courses to be retaken. Besides, such students also pay the reexamination fees per Course retaken as well as the registration fees.

3.9 Change of Course

A student may be permitted to change course(s) in an Academic Programme in order to substitute the Course(s) failed. The Substitute Course(s) should be within the specified Course(s) for that Academic

Programme.

3.10 Change of Programme

a) A student may be permitted to change from one academic Programme to another on condition that:

   i. He/She had satisfied the admission requirements for the Academic Programme applied for;

   ii. He/She should not have been attending lectures/tutorials and other academic activities of the Academic programme he/she would want to change from for more than one-half of the duration of the programme.

   iii. He/She had not been previously dismissed on disciplinary grounds from the University.

b) A student permitted to change his/her Programme may be allowed to transfer the Credits from the previous Academic programme to the new Academic Programme, provided that the Credits being transferred are relevant to the new Academic Programme.

3.11 Guidelines for Transfer of Credit Units

Students who intend to apply to transfer from other recognized Universities or equivalent Institute of Higher Learning to Makerere University. Should have the following requirements;

a) Must satisfy the admission requirement for the academic program(s) applied for.

b) Must obtain and submit an official academic Transcript (s) Certificate from a recognized University/institution of Higher learning in which he/she was previously enrolled indicating his/her academic status, the courses offered/ taken, the credit units completed and the grades obtained in each course.

c) Must have obtained the equivalent of Cumulative Grade Point Average of at least 3.0

d) Will be permitted to transfer to Makerere University Credits earned but the maximum of Credits should not exceeding 60% of the minimum graduation load of the academic programme applied for.

e) If permitted to transfer she/he should not be allowed to transfer the equivalent of credit units in a course in which she/he obtained a Grade point which was lower than 2.0

f) An application must be accompanied by recommendations from the Institution or Authority she/he is transferring from.

3.12 Re-admission after being discontinued due to weak academic performance

a) A student who has been discontinued from studies because of weak academic performance may be permitted to reapply to another programme and compete with other applicants for re-admission into first year.

b) A student who applies and gains re-admission after being discontinued due to weak academic performance will not be permitted to transfer credits from the previous academic programmes.

c) A student who was dismissed from his/her studies because of examination irregularities will not be considered for re-admission.

4.0 CONDUCT OF EXAMINATIONS

4.1 Sitting Semester Examinations

Only registered students are permitted to sit University examinations. A student who does not pay all the required University fees will not be permitted to sit the University examinations. The examination results of any student who has sat the examinations without being registered shall be nullified. Students are strongly warned against this.

4.2 Absence from Examination

a) If the Board of the school/collge found out that a student has no justifiable reason for having been absent from a particular examination, such a student shall receive a fail (F) Grade for the Course (s) he/she had not sat the examination in. The Course(s) in which the Fail (F) Grade was/were awarded shall also account in the calculation of the CGPA.

b) If the board of a school/college is satisfied that a student was absent from coursework assessment and or a final examination due to justifiable reason(s) such as sickness or loss o a parent/ guardian, then a Course Grade of ABS shall be assigned to that course(s).

NOTE: First Years that are not yet registered with the college/ University are not eligible for the above opportunity

4.3 Deferred Examination

A student who provides credible reason for failure to complete coursework assessment or to attend an examination based on 4.2 (b) above may be permitted to 'sit' the deferred examination or coursework assignment when the course(s) is being offered again.

a) Students needing a deferred exam must submit application to their respective Dean's or Director's Office. The application and supporting documentation pertaining to the absence must be presented as soon as the student is able, having regard to the circumstances underlying the absence but not later than the beginning of the Semester in which the examination is scheduled. Where the cause is incapacitating illness, a student must present a University Hospital Medical Statement Form. In other cases, including severe domestic affliction, adequate documentation must be provided to substantiate the reason for an absence.

4.4 Grading of Marks

The overall Marks a candidate obtains in each Course he/she offered is graded out of a maximum of One hundred (100) Marks and assigned appropriate Letter Grades and Grade Points as follows:

Marks	Letter	Grade Point	Interpretation
90-100	A+	5	Exceptional
80-89	A	5	Excellent
75-79	B+	4.5	Very good
70-74	B	4	Good
65-69	C+	3.5	Fairly good
60-64	C	3	Fair
55-59	D+	2.5	Pass
50-54	D	2	Marginal pass
45-49	E+	1.5	Marginal Fail
40-44	E-	1	Clear Fail
0-39	F	0	Bad Fail

A student with a grade point greater or equal to 2 (Letter Grade D) is considered to have passed the course unit.

Note: The above Grading System applies with effect from 2008/2009 Academic Year on wards.

4.5 Calculation of the Cumulative Grade Point Average (CGPA)

The cumulative grade point average at a given time shall be obtained by:

a) Multiplying the grade point obtained in each course by the Credit Units (CU) assigned to the Course to arrive at the Weighted Score for the Course.

b) Adding together the Weighted Scores for all Courses taken up to that time to obtain total Weighted Score.

c) Dividing the total Weighted Score by the total number of Credit Units taken (attempted) up to that time.

Example:

Courses	CU	Grade points	Weighted Score
LSG 1101	4	3.0 C	3.0 x 4 = 12
LSG 1101	3	4.0 B	4.0 x 3 = 12
LSG 1101	3	4.0 B	4.0 x 3 = 12
LSG 1101	3	5.0 A+	5.0 x 3 = 15
EMT 1101	4	4.5 B+	4.5 x 4= 18
TEC1102	4	2.0 C-	2.0 x 4 = 8
Total	21		Total = 66

(66 divided by 18 i.e. 77/21 = 3.66 CGPA)

4.6 Classification of a Degree/Diploma

The degree obtained shall be classified according to the CGPA as follows;

Class	CGPA
1st Class	4.40 - 5.00
2nd Class - Upper Division	3.60 - 4.39
2nd Class - Lower Division	2.80 - 3.59
Pass	2.0 - 2.79

4.7 Approval of Examination Results

The Senate has delegated the power to approve all examination results to the Board of the college/school. But the results shall not be regarded as final until they are confirmed by Senate on submission of Appropriate Pass Lists to Senate by the relevant Board. The Appropriate Pass lists to Senate should be accompanied with college Board Minutes. Students shall be provided with examination results using the approved testimonial format.

4.8 Appeals

Any student or candidate aggrieved by a decision of the Board may appeal to the Senate Examinations Committee for reversal or Moderation of the decision of the Board.

4.9 Publication of results

The relevant department shall publish provisional Examination Results of Candidates in every examination son after the meeting of departmental Examination Committee; the Examination Results shall be arranged and published in a manner as prescribed by Senate.

4.10 Moderation and External Examiners

All question papers shall be moderated internally and where need be externally moderated by the external examiner. In addition external examiners shall participate in vetting of questions and making of scripts for all final examinations. They shall participate in overall results and classification of degrees.

4.10.1 Board of Examiners

There shall be a College Board of Examiners composed of external and internal examiners appointed by senate on the recommendation of the board of the college. The Board shall be chaired by the Principal of the college. The Board of Examiners shall receive, consider and recommend to the Board the examination results of each candidate.

4.11 Malpractices in the conduct of Examinations

It shall be an offence for a student/candidate involved in an examination/test to:

(a) Sit or attempt to sit the examination without valid documentation.
(b) Enter the examination hall/room later than half an hour after the examination/test has commenced.
(c) Leave the examination hall/room earlier than half an hour after the examination has commenced except in emergencies with the express permission of the invigilator.
(d) Carry out a conversation or any other communication with another student/candidate once the examination has commenced.
(e) Indulge in any disruptive conduct including, but not limited to, shouting assault of another student/ candidate, using abusive and /or threatening language, destruction of university property or the property of another student/candidate.
(f) Take out of the examination room/hall answer booklet(s), used or unused.
(g) Neglect, omit or in any other way fail to follow lawful instructions or orders issued by the invigilator.
(h) Physically assault or insult an Invigilator or any University Official involved in the conduct of the examination.

4.11.1 Cheating in Examinations

Cheating is defined as any illegitimate behavior designed to deceive those setting, administering and marking the assessment. Cheating in a University assessment is a very serious academic offence, which may lead ultimately to expulsion from the University. Cheating can take one of a number of forms, including:

(a) Taking into the exam venue, or possessing whilst in that room, any books, notes or other material which has/have not been authorized. Writing notes on any part of your body, recording apparatus, mobile phones or any other unauthorized electronic equipment. Having notes written in your identity documents or authorized examination materials e.g. logarithm table
(b) Copying from another student in an examination. Aiding or attempting to aid another candidate, or obtaining or attempting to obtain aid from another candidate.
(c) Involve oneself in Plagiarism, that is:
    - Pass off the words or ideas of someone else as his/her own without proper acknowledge or crediting the original source.
    - Replicate one's own work which one has presented elsewhere for assessment.
(d) Obtaining an examination paper ahead of its authorized release.
(e) Sit or attempt to sit the examination without valid documentation

4.11.2 Fraud in Examinations

It shall be an offence for a student/candidate involved in an examination to:

(a) Import into the examination hall/room, in person or by agent, a pre-prepared answer script/booklet.
(b) Substitute an answer script/booklet prepared

outside the examination room/hall for the one already submitted to the invigilator/Examiner.

(c) Falsify or alter marks awarded on an examination script/book.

(d) Impersonate another student/candidate.

(e) Procure or induce another person to sit for him/her.

4.11.3 Penalty

Any student/candidate found guilty of contravening the above shall be liable to:

(a) Caution and cancellation of the relevant examination, or

(b) Cancellation of the relevant examination and suspension from the University for a period not exceeding two years, or

(c) Cancellation of the relevant examinations and dismissal from the University.

(d) A Government-sponsored student/candidate found guilty of contravening the above, may have the Government sponsorship cancelled besides any other punishment taking into account the gravity of the offence except in cases where the student/candidate is dismissed from the University.

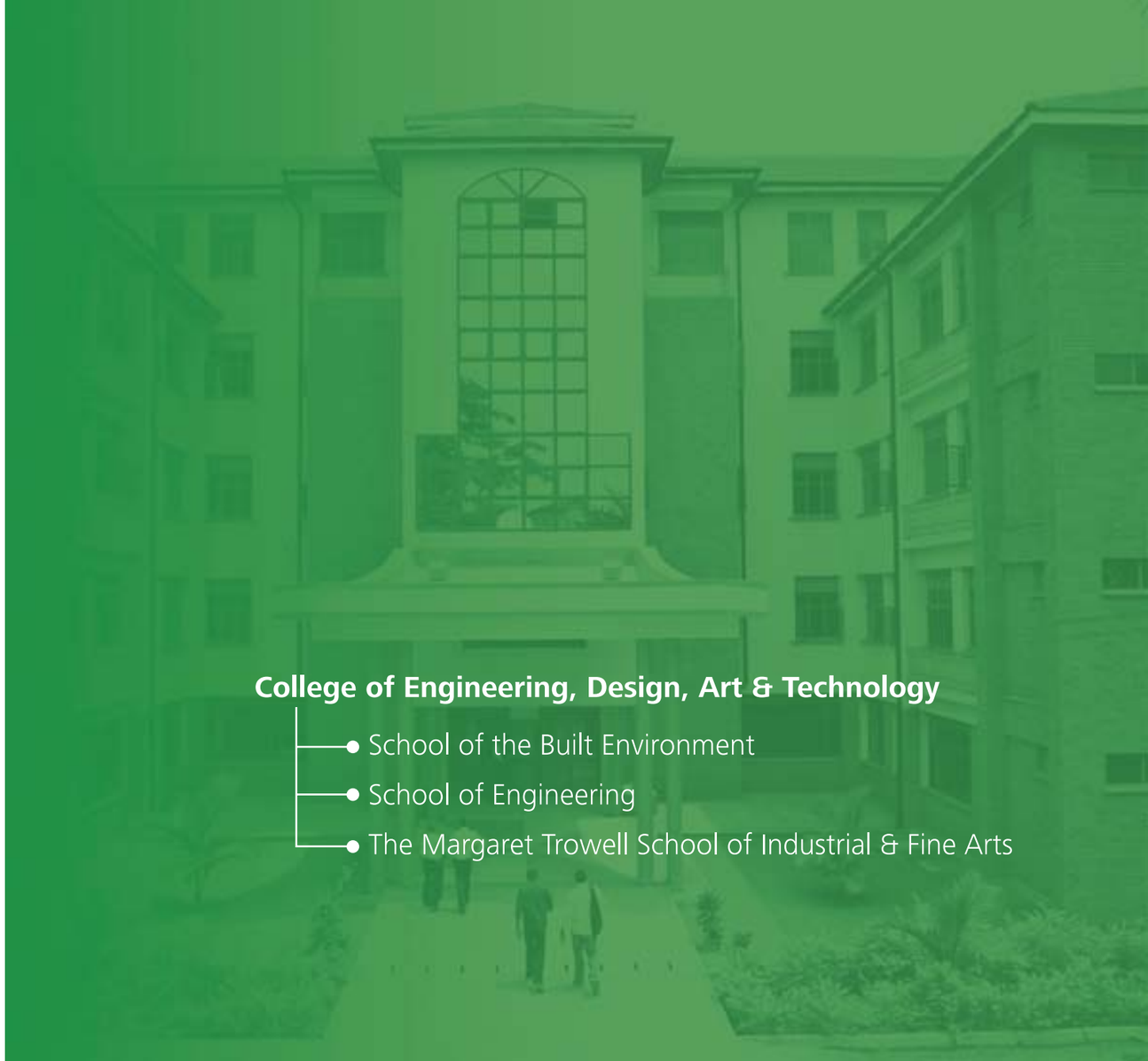
(e) Any student/candidate found guilty of contravening the above by physically assaulting an Invigilator or a University official shall be dismissed from the University.

5.0 Accommodation of Religious Creed

(a) Makerere University is a secular institution. It is the official policy of the University that all days in a week are considered working days. Staff and students are expected to conduct or attend lectures and examinations at scheduled time and day.

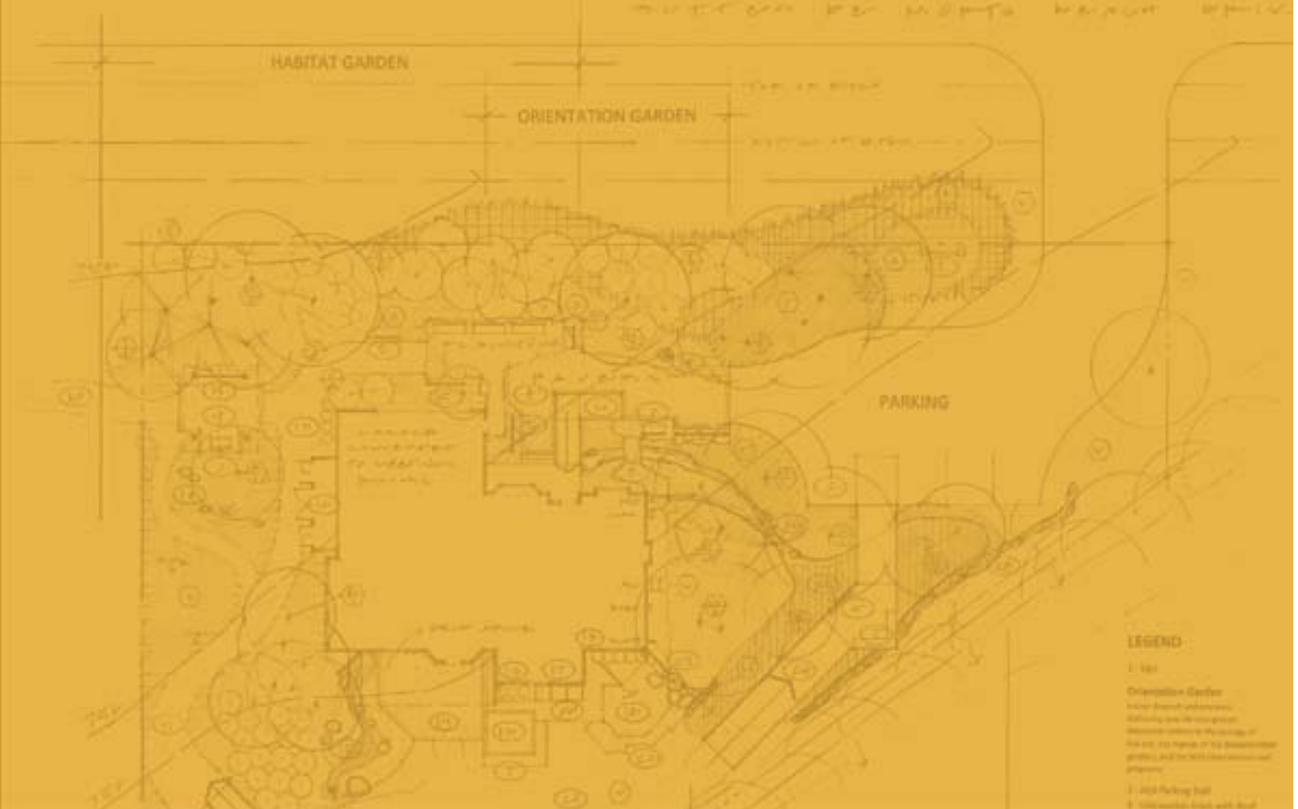
(b) Requests to accommodate a student's religious creed by scheduling tests or examinations at alternative times may not be entertained.

(c) Students who miss exams or test based on religious creed should inform their respective Deans/directors as soon as the timetable is published preferably two weeks before categorized as being absent without justifiable cause and a Course Grade of ABS shall be assigned to that Course(s).



College of Engineering, Design, Art & Technology

- School of the Built Environment
- School of Engineering
- The Margaret Trowell School of Industrial & Fine Arts



School of the Built Environment

Department of Architecture and Physical Planning

Department of Geomatics and Land Management

Department of Construction Economics and Management

Word from the Dean

School of the Built Environment

The management and use of the built environment is increasingly becoming of paramount importance in Uganda and the world over. There are many challenges associated with the ever increasing population of the world including overpopulated cities, inadequate housing, mushrooming slums, land related conflicts, poor land management, corruption in construction, cost and time overruns, inadequate public infrastructure and many others. These challenges are especially apparent in developing countries Uganda inclusive.

The School of Built Environment houses the department of architecture and physical planning; the department of Geomatics and Land Management; and the department of Construction Economics and Management. The school currently offers programmes in architecture, physical and urban planning, land surveying, quantity surveying, land economics and construction management. The School, in collaboration with other institutions worldwide is trying to address the challenges facing the built environment. Research and outreach are being carried out on global issues such as urban sprawl, unplanned cities, inefficient provision of infrastructure, inadequate management of construction, poor land management, lack of low cost housing, and so on. The school has staff with expertise to handle most of the issues in the area of built environment and in addition, the school has collaboration arrangements with other universities in Sweden, Norway, Kenya, Tanzania, Mozambique, Botswana and many others.

The school takes as priority provision of hands on experiential learning so that the student is ready to work with minimum internship supervision after graduation. For this we thank the firms that collaborate with us in providing the students' industrial training. Most of the graduates from the school end up being absorbed to work in the areas of their study.

Assoc. Prof. Henry Alinaitwe
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Word from the chair

Department of Architecture and Physical Planning

Established in 1984, the Department of Architecture has enjoyed a rich and diverse experience in training students from all walks of life both within Uganda and all over East Africa. The educational experience is broadened and enriched by close interaction between the department, professional architects in the field and partner universities like the Norwegian University of Science and Technology (NTNU), The Oslo School of Architecture and the Eastern African architecture schools.

The first cohort was admitted for the Bachelor of Architecture in the Academic Year 1989/1990, with eight students. At the present, the department's annual intake has reached thirty students on average.
The Department seeks to stimulate future architects to think and learn more widely about their art, about the vast spectrum of sources from which they legitimately can and should draw inspiration, and about the impact that their work will have on the future of the society they are to serve.

Design education in the Department of Architecture is based on the studio model of instruction, with students organized in small groups working directly with staff tutors on guided research and design projects over the length of a full semester.

Dr. Stephen Mukiibi
smukiibi@tech.mak.ac.ug

Programme
Bachelor of Architecture

The Bachelor of Architecture (B.Arch.) Degree programme aims at producing professionals who will assume major leadership role in shaping the built environment, the quality of which is the major determinant of the quality of life of society.

Objectives of the Programme

The educational objectives of this programme are to:

- Produce graduates who are able to practice architecture to serve Uganda and the regional industries, government agencies, or national and international industries.
- Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: architecture, planning and construction.
- Prepare graduates for personal and professional success with awareness and commitment to their ethical and social responsibilities, both as individuals and in team environments.
- Prepare graduates who are capable of entering and succeeding in an advanced degree program in a field such as architecture, planning, construction management, real estate business and other related fields.

Programme structure

Programme duration - **5 years**
Minimum graduation requirement - **176 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
ONE	ONE		**All Core Courses**	
		ARC1101	Architectural Design Portfolio I	5
		ARC1102	Architectural Design Fundamentals I	4
		ARC1103	Theory of Architecture I	2
		ARC1104	Building Technology and Services I	3

		TEC1101	Communication Skills for Technology	3
		EMT1103	Mathematics for Architecture	3
				20
	TWO		**All Core Courses**	
		ARC1201	Architectural Design Portfolio II	5
		ARC1202	Architectural Design Fundamentals II	4
		ARC1203	Theory and Design of Structures for Architects I	2
		ARC1204	Environmental Building Science I	2
		ARC1205	History of Architecture I	2
				15
	RECESS	TEC1301	Workshop Practice	**2**
		TOTAL CREDIT UNITS FOR YEAR 1		**37**
TWO	ONE		**All Core Courses**	
		ARC2101	Architectural Design Portfolio III	5
		ARC2102	Architectural Design Fundamentals III	4
		ARC2103	Theory of Architecture II	2
		ARC2104	Building Technology and Services II	3
		ARC2106	Introduction to Computers and CAD	2
		TEC2101	Sociology for Technology	3
				19
	TWO		**All Core Courses**	
		ARC2201	Architectural Design Portfolio IV	5

		ARC2202	Architectural Design Fundamentals IV	4
		ARC2203	Theory and Design of Structures for Architects II	2
		ARC2204	Environmental Building Science II	2
		ARC2205	History of Architecture II	2
		ARC 2207	Economics for Architects	3
				18
	RECESS	ARC2301	Industrial Training for Architects I	**2**
		TOTAL FOR YEAR 2		**39**
THREE	ONE	**Core Courses**		
		ARC3101	Design Portfolio V	5
		ARC3102	Architectural Design Fundamentals V	4
		ARC3103	Theory of Architecture III	2
		ARC3104	Building Technology and Services III	3
		ARC3105	History of Architecture III	2
		ARC 3107	Architectural Computer Aided Design I	2
				18
	TWO	**Core Courses**		
		ARC3201	Design Portfolio VI	5
		ARC3202	Architectural Design Fundamentals VI	4
		ARC3203	Theory and Design of Structures for Architects III	2
		ARC3204	Construction Management for Architects	2
		ARC3205	Environmental Building Science III	2
		ARC3206	Business Management for Architects	3

				18
	RECESS	ARC3301	Industrial Training for Architects II	**2**
		TOTAL CU FOR YEAR THREE		**38**
FOUR	ONE	**Core Courses**		
		ARC4101	Architectural Design Portfolio VII	5
		ARC4102	Urban and Regional Planning for Architects	4
		ARC4104	Landscape Design	2
		ARC4108	Computer Aided Design for Architects II	2
			Elective Courses (Select One)	
		ARC4105	Housing Development and Management	2
		ARC4106	Environment and Development for Architects	2
				15
	TWO	**All Core Courses**		
		ARC4201	Architectural Design Portfolio VIII	5
		ARC4202	Interior and Furniture Design	4
		ARC4203	Building Design Economics	3
		ARC4204	Research Methods for Architects (Audited)	2
			Elective Courses (Select One)	
		ARC4205	Business Law for Architects	2
		ARC4206	Philosophy for Architects	2
				16
	RECESS	ARC4301	Industrial Training for Architects	2

		TOTAL CU FOR YEAR FOUR		**33**
FIVE	ONE		**All Core Courses**	
		ARC5101	Architectural Project Reports	10
		ARC5102	Professional Architectural Practice	2
		ARC5104	Architectural Project Management	2
				14
	TWO		**All Core Courses**	
		ARC5201	Architectural Design Thesis	15
	TOTAL FOR YEAR FIVE			**29**
	MINIMUM GRADUATION LOAD			**176**

Programme
Bachelor of Urban and Regional Planning Degree Programme (B.U.R.P)

Objectives of the Programme

The overall objective of the programme is to build national capacity by training and providing professional planners for our expanding and changing urban and rural areas. Specifically, the programme aims to achieve the following objectives:

- Strengthening urban and regional authorities with staff who can handle issues of the growing towns and are capable of forecasting future developmental demands and problems.
- Introducing a professional component in the training programmes so that the graduates become more competitive in the fickle job market.
- Offering an opportunity to practicing planners who are holders of Certificates and Diplomas to acquire the necessary skills to improve on their performance.
- Producing planners who are imaginative and critical thinkers to analyse and address challenges being experienced in urban and rural areas.

Programme structure

All first year courses are Core courses. Students will offer five (5) courses in the First Semester and five (5) courses in the Second Semester

Programme duration - **4 years**

Minimum graduation requirement - **165 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		REP 1101	Introduction to Urban & Regional Planning	4
		REP 1102	History of Urban and Regional Planning	4
		UNI 1001	Communication Skills	3
		REP 1103	Urbanization and the Environment	4
		REP 1104	Introduction to Computer Applications for Physical Planners	2
				17
	TWO		**All Core Courses**	
		REP 1201	Planning Philosophy and Theory	4
		REP 1202	Community Health	3
		REP 1203	Sociology for Physical Planners	4
		UNV 1002	Introduction to Gender	3
		REP 1204	Studio I	5
				19
	RECESS PERIOD	REP 1301	Industrial Training	2
	TOTAL CU FOR YEAR ONE			**38**
YEAR TWO	All second year courses are Core courses. Students will offer five (5) courses per Semester			
	ONE		**All Core Courses**	
		REP 2101	Planning Law	4
		REP 2102	Land use Planning and Management	4
		REP 2103	Regional Planning Principles and Techniques	4
		REP 2104	Interpretation of Maps & Remote Sensing	5
		REP 2105	Economics for Physical Planners	4
				21
	TWO		**All Core Courses**	
		LSG 1202	Principles of Geographical Information Systems &Remote sensing	4
		REP 2201	Environment Planning and Management	4

		REP 2202	Planning for Infrastructure, Utilities and Public Services 600	4
		REP 2203	Human Settlements Planning & Development	4
		REP 2204	Studio II	5
				21
	RECESS	REP 2301	Industrial Training	2
	TOTAL CU FOR YEAR TWO			**44**
YEAR THREE	In the third year students will offer four (4) Core courses and one (1) Elective per Semester			
	ONE		**All Core Courses**	
		REP 3101	Geographical Information System (GIS) Applications	4
		REP 3102	Basic Surveying For Physical Planners	5
		REP 3103	Computer Aided Planning and Design	4
		REP 3104	Landscape Design and Management	4
			Elective Courses (Choose at least one)	
		REP 3104	Inner City Development	4
		REP 3105	Entrepreneurship for Physical Planners	3
				20
	TWO		**All Core Courses**	
		REP 3201	Research Methods & Statistics	4
		CIV 3202	Traffic and Transportation Planning	4
		REP 3202	Urban Design	4
		REP 3203	Studio III	5
			Elective Courses (Choose at least one)	
		REP 3204	Planning for Industrial Development	4
		REP 3205	Urban Land Economics	4

				21
	RECESS PERIOD	REP :3301	Industrial Training	2
	TOTAL CU FOR YEAR 3			**43**
YEAR FOUR	In the fourth year students will offer four (4) Core courses and One (1) Elective per Semester			
	ONE		**All Core Courses**	
		REP 4101	Politics and Planning	4
		REP 4102	Tourism Planning	4
		REP 4103	Building Science	4
		REP 4104	Planning Research Project	3
			Elective Courses (Choose at least one)	
		REP 4105	Real Estate Development and Management	4
		REP 4106	Resource Mobilization for Urban & Rural Development	4
				19
	TWO		**All Core Courses**	
		REP 4201	Planning Practice and Professional Ethics	4
		REP 4202	Project Planning and Management	4
		REP 4203	Urban Governance and Management	4
		REP 4204	Studio IV	5
			Elective Courses	
		REP 4205	Integrated and Strategic Regional Planning	4
		REP 4206	Local government and Development planning	4
				21
		TOTAL CU FOR YEAR 4		**40**
		MIN GRAD LOAD		**165**

Word from the chair

Department of Geomatics and Land Management

The Department of Geomatics and Land Management, Makerere University trains students in various Geomatics fields such as Land Surveying, Geographical Information Science/Technology, Remote Sensing and Image Analysis, Cartography and Mapping Science, and Land Management. Although these disciplines are currently taught as part of the BSc Surveying Undergraduate Degree Programme, our plan is to develop them as fully fledged standalone programmes at both undergraduate and graduate levels. The Department shares the mission of the College of Engineering, Design, Art and Technology, which is to provide high quality Technological Education and Training, Research, Professional Services and Innovation for Sustainable National and Regional Development.

A career in Geomatics is a correct choice for one's academic and professional development in this modern world considering the fact that the geo-spatial industry is one of the fastest growing industries in the world.

We intend to use this handbook as the primary communication channel between the Department and stakeholders such as: Alumni of the Department, the Institution of Surveyors of Uganda (ISU), Prospective students and parents, the research community, professional as well as other people interested in Geomatics issues in Uganda and beyond.

Dr. Moses Musinguzi
mmusinguzi@tech.mak.ac.ug

Programme

Bachelor of Science in Land Surveying & Geomatics

Objectives of the Programme

The educational objectives of the programe are;

- Producing graduates who are well grounded with skills and knowledge of the surveying and geomatics discipline.
- Imparting analytical, investigative and reporting skills with respect to land related issues.
- Instilling business skills in students so as to make them able to operate private business in Geomatics and related fields.
- Promoting professionalism, work ethics and social values.
- Facilitating good practical understanding of the technical vocational foundation of surveying/geomatics to facilitate self learning and professional development.

Programme structure

Programme duration - **4 years**

Minimum graduation requirement - **158 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		LSG 1101	Principles of Surveying and Instrumentation	4
		LSG 1102	Physics for Surveyors	3
		LSG 1103	Introduction to Computing	3
		LSG 1104	Economics for Surveyors	3
		EMT 1102	Survey Mathematics	4
		UNV 1001	Communication Skills	3
				20
	TWO		**All Core Courses**	

		LSG 1201	Engineering Surveying	4
		LSG 1202	Principles of Geographical Information Systems and Remote Sensing	4
		LSG 1203	Computer Applications and Programming	3
		LSG 1204	Land Economy 1	3
		LSG 1205	Geo-hazards and Environmental Studies	3
		REP 1206	Introduction to Urban and Regional Planning	4
				21
	RECESS PERIOD	LSG 1301	Survey Camp	4
			Total Credit Units Year 1	**45**
YEAR TWO	ONE		**All Core Courses**	
		LSG 2101	Mapping Science	4
		LSG 2102	Building and Maintaining Geo-databases	3
		LSG 2103	Land Economy II	3
		LSG 2104	Construction Studies	4
		EMT 2102	Statistical and Analytical Methods	4
		TEC 2101	Sociology for Technology	3
				21
	TWO		**All Core Courses**	
		LSG 2201	Cadastral Surveying	4
		LSG 2202	Principles of Satellite Positioning	4
		LSG 2203	Introduction to Photogrammetry	4
		LSG 2204	Hydrographic Surveying	3
		LSG 2205	Land Law for Surveyors	3
		UNV 1002	Introduction to Gender	3
				21

	RECESS PERIOD	LSG 2301	Field Training I	2
			Total Credit Units Year 2	**44**
YEAR THREE	ONE		**All Core Courses**	
		LSG 3101	Adjustment of Survey Measurements	4
		LSG 3102	Physical Geodesy	3
		LSG 3103	Mapping from Satellite Imagery	4
		LSG 3104	Advanced Photogrammetry	4
		LSG 3105	Geospatial Data Analysis and Modeling	4
				19
	TWO		**All Core Courses**	
		LSG 3201	Analysis of Survey Measurements	4
		LSG 3202	Advanced Satellite Positioning	4
		LSG 3203	Research Methods for Surveyors	3
		LSG 3204	Project Management for Surveyors	4
				15
	RECESS PERIOD	LSG 3301	Field Training II	2
			Total Credit Units Year 3	**36**
YEAR FOUR	ONE		**All Core Courses**	
		LSG 4101	Professional Practice for Surveyors	4
		LSG 4102	Negotiation and Dispute Resolution	4
		LSG 4103	Survey Project I	4
			Elective Courses (Choose 1 Course)	
		LSG 4104	Geospatial Information Management	4
		LSG 4105	Space Geodesy	4
		LSG 4106	Land Policy and Land Reform Studies	4

				16
	TWO		**All Core Courses**	
		LSG 4201	Entrepreneurship and Business Management	4
		LSG 4202	Land Administration and Registration	4
		LSG 4203	Survey Project II	4
			Elective Courses (Choose 1 Course)	
		LSG 4204	Advanced Remote Sensing Applications	4
		LSG 4205	Real Estate Management	4
		LSG 4206	Advanced Engineering and Mining Surveying	4
				16
			Total CU for Year IV	**32**
			Minimum graduation load	**157**

Word from the chair

Department of Construction Economics and Management

Construction Economics & Management deals with facets of the built environment, primarily economic considerations, management principles, applicable law and the governing science and technology. The department is geared towards capacity building in the areas of planning, designing, construction and management of all types of residential, commercial and industrial developments.

The Construction Economics & Management Department at the CEDEAT started in 2004 with 67 students. Currently, the student population stands at about 600 students, making the department undoubtedly one of the fastest growing at the college.Three programmes are run under the department, and these are:

1. **Bachelor of Science in Quantity Surveying (BSCQS), 4 years**
2. **Bachelor of Science in Land Economics (BSCLE), 4 years**
3. **Bachelor of Science in Construction Management (BSCCM), 3 years**

This department is vindicated by the fact that whereas specialists such as architects and engineers are required in any construction project, eventually the successful physical execution depends on the expertise of those with the appropriate management skills, a command of cost planning and cost management techniques, and a thorough understanding of the administrative and legal aspects of building developments. This is what forms the core of Construction Economics and Management.

It is expected that a graduate who has passed through this department will:

1. Have an excellent understanding of the principles of management, economics, construction technology, and environmental engineering.
2. Be proficient communicators with well-developed planning and problem-solving skills, able to work positively in a team situation.

Assoc. Prof. Dr. A.G. Kerali

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Programme

Bachelor of Science in Quantity Surveying (BSCQS)

Objectives of the Programme

The objective of the quantity surveying undergraduate degree programme is to provide students with a sound theoretical and practical base to enable them measure, value, cost and specify construction resources, and to become active players in the rational identification, utilization and control of resources within the construction industry. Graduates of this programme are expected to gain employment in both the private and public sector. The major input of the revised programme is to train quantity surveyors with sufficient skills for the public and private sectors: government ministries, local authorities, departments and parastatals, construction firms, and private consultancy firms offering quantity surveying services.

Programme structure

Programme duration - **4 years**

Minimum graduation requirement - **165 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		CSC 1100	Computer Literacy	4
		EMT 1108	Engineering Mathematics	4
		CMG 1106	Geophysical Environment	3
		LAW 1120	Basic Law and Governance Structures	3
		QUS 1101	Introduction to Quantity Surveying	3
		UNV 1001	Communication Skills	3
				20
	TWO		**All Core Courses**	
		LEC 1209	Elements of Structural Analysis	3
		LAW 1206	Law of Contract for Surveyors	3
		ARC 1206	Elements of Architectural Design Fundamentals	3
		QUS 1203	Quantity Surveying I	3
		QUS 1201	Construction Technology I	4
		QUS 1202	Construction Drawing	4
				20
	RECESS PERIOD	QUS 1301	Measured Drawing	2
		UNV 1002	Introduction to Gender	3
			Total Credit Units Year 1	**45**
YEAR TWO	ONE		**All Core Courses**	
		CMG 2108	Construction Materials	4
		QUS 2102	Construction Technology II	4
		LAW 2122	Law of Torts for Construction	3
		BAY 2120	Principles of Management	3
		TEC 2101	Sociology for Technology	3
		QUS 2107	Building Finishes & Fixtures	3
				20
	TWO		**All Core Courses**	
		LAW 2220	Commercial Law for Construction	3
		QUS 2205	Cost and Value Engineering	3
		QUS 2209	Quantity Surveying II	4
		QUS 2208	Building Services	3
		SUV 2206	Land Surveying for Construction	3
		QUS 2210	Economics of Property and Construction	3
				19

	RECESS PERIOD	QUS2301	Industrial Training	2
			Total Credit Units For Year II	**41**
YEAR THREE	ONE		**All Core Courses**	
		QUS 3106	Construction Technology III	4
		LAW 3120	Elements of Property Law	3
		QUS 3103	Housing Development and Management	3
		CMG 3107	Maintenance Management	3
		COE 3140	Principles of Accounting for Surveyors	3
		LAW 3121	Elements of Planning Law	3
				19
	TWO		**All Core Courses**	
		COE 3230	Entrepreneurship	4
		QUS 3208	Quantity Surveying III	4
		QUS 3204	Construction Production Management*	3
		QUS 3207	Construction Contract Administration	4
		LEC 3207	Research Methods and Statistics	4
				19
	RECESS PERIOD	QUS 3301	Industrial Training	2
			Total Credit Units For Year III	**40**
YEAR FOUR	ONE		**All Core Courses**	
		QUS 4110	Construction Technology IV	4
		QUS 4107	Operations Research Techniques	4
		QUS 4104	Building Surveying	3
		QUS 4108	Professional Practice, Procedure and Ethics	4

		QUS 4109	Construction Project Management	4
				19
	TWO		**All Core Courses**	
		QUS 4200	Final Year Research Project 1& II	5
		QUS 4207	Quantity Surveying IV	4
		QUS 4208	Facilities Management	4
		QUS 4209	Analysis of Prices and Estimating	4
		QUS 4205	Arbitration & Alternative Dispute Resolution in Construction	3
				20
			Total Credit Units For Year IV	**39**
			Minimum graduation load	**165**

Programme

Bachelor of Science in Land Economics (BSCLE)

Objectives of the Programme

The key objective of this programme is to provide admitted students with a sound theoretical and practical base to enable them conduct valuations, investment reports and optimally manage land, landed property and real estate developments. They should also be able to professionally identify, manage and value landed property and other specialized assets. Graduates of this programme are expected to gain employment in both the private and public sector. The major input of the programme is to train valuation surveyors with sufficient skills for the public and private sectors: government ministries, local authorities, banks, mortgage institutions, departments, parastatals, construction firms, and private consultancies in valuation surveying.

Programme structure

Programme duration - **4 years**

Minimum graduation requirement - **174 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		CSC 1100	Computer Literary	4
		EMT 1108	Engineering Mathematics	4
		SUV 1105	Land Plan Drawing	3
		LAW 1120	Basic Law and Governance Structures	3
		ECO 1120	Microeconomics for Surveyors	3
		UNV 1001	Communication Skills	4
				21
	TWO		**All Core Courses**	
		LEC 1207	Real Estate Valuation I	4
		LAW 1220	Law of Contract for Surveyors	3
		ECO 1220	Macroeconomics for Surveyors	3
		LEC 1208	Land Economics I	4
		QUS 1205	Construction Technology I	4
		QUS 1206	Construction Drawing	3
				20
	RECESS PERIOD	QUS 1301	Measured Drawing	2
		UNV 1002	Introduction to Gender	3
			TOTAL CREDIT UNITS FOR YEAR 1	**46**
YEAR TWO	ONE		**All Core Courses**	
		CMG 2108	Construction Materials	4
		QUS 2102	Construction Technology II	4
		LAW 2121	Law of Torts for Technology	3
		LEC 2108	Real Estate Valuation II	4
		TEC 2101	Sociology for Technology*	3
		QUS 2107	Building Finishes and Fixtures	3
				21
	TWO		**All Core Courses**	
		LAW 2220	Commercial Law for Construction	3
		LEC 2208	Land Economics 1I	4
		COE 2230	Principles of Accounting	3
		QUS 2208	Building Services	3
		SUV 2208	Land Registration	3
		SUV 2207	Land Measurement Sciences	3

				19
	RECESS PERIOD	LEC 2301	Industrial Training	2
			Total Credit Units For Year II	**42**
YEAR THREE	ONE		**All Core Courses**	
		LAW 3121	Administrative and Local Government Law	3
		LAW 3122	Real Property Law I	3
		CMG 3107	Maintenance Management	3
		LEC 3107	Investment Appraisal I	4
		LEC 3106	Real Estate Development	4
		LEC 3108	Real Estate Valuation III	4
				21
	TWO		**All Core Courses**	
		DEC 3220	Development Economics for Construction 45	3
		COE 3230	Entrepreneurship	4
		LEC 3208	Property Economics	4
		LEC 3209	Investment Appraisal II	4
		LEC 3203	Urban & Regional Planning*	3
		LEC 3207	Research Methods & Statistics	3
				21
	RECESS PERIOD	LEC 330	Industrial Training	2
			Total Credit Units For Year III	**44**
YEAR FOUR	ONE		**All Core Courses**	
		LEC 4107	Real Estate Valuation IV	3
		LEC 4108	Professional Practice, Procedure& Ethics	4

		LEC 4104	Property Management	3
		QUS 4104	Building Surveying	3
		LEC 4106	Land Policy Studies	3
		LEC 4109	Real Estate Finance & Taxation	3
				19
	TWO		**All Core Courses**	
		LEC 4200	Final Year Project I&II	5
		ECO 4200	Elements of Econometrics *	3
		LAW 4230	Real Property Law II	3
		SUV 4206	Geographical Information Systems	4
		LEC 4207	Property Investment Analysis	3
		LEC 4206	Property Marketing	3
				21
			Total Credit Units For Year IV	**40**
			Minimum Graduation Load	**172**

Programme

Bachelor of Science in Construction Management (BSCCM)

Objectives of the Programme

The main objective of the construction management undergraduate degree programme is to train highly skilled personnel knowledgeable in the management and control of the construction process, and optimum aggregation of construction resources including money, manpower, materials, machinery and methods of work. The programme provides students enrolling with a sound theoretical and practical base to enable them facilitate the rational identification and utilization of resources in the construction industry. Graduates of this programme are expected to gain employment in both the private and public sector. The major input of the two programmes will be to train construction managers that will be absorbed in the public and private sectors in such areas as government ministries, local governments, other government departments and parastatals, construction firms, and private consultancies. Graduates may also employ themselves as contractors, consultants, researchers and entrepreneurs.

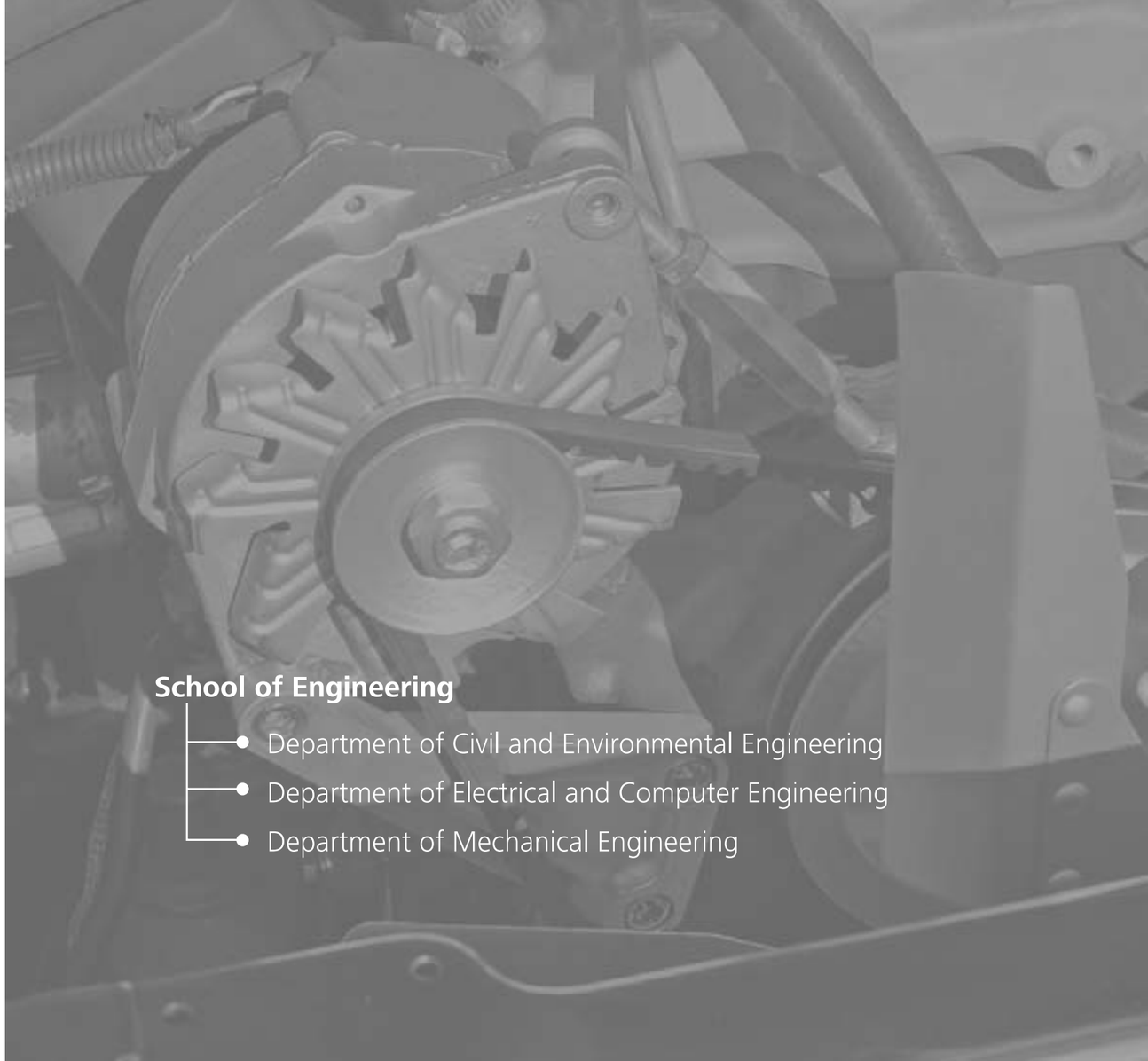
Programme structure

Programme duration - **3 years**

Minimum graduation requirement - **129 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		CSC 1100	Computer Literacy	4
		EMT 1108	Engineering Mathematics	4
		CMG 1101	Building Science 1	4
		CMG 1106	Geophysical Environment	3
		CIV 1104	Elements of Geotechnical Engineering	3
		UNV 1001	Communication Skills	3
				21
	TWO		**All Core Courses**	
		LEC 1209	Elements of Structural Analysis	3
		CMG 1200	Financial Accounting	4
		QUS 1205	Construction Technology I	4
		LAW 1221	Business Law for Construction	3
		CMG 1205	Construction Management I	4
		QUS 1206	Construction Drawing	3
				21
	RECESS PERIOD	TEC 1301	Workshop Practice	2
		UNV 1002	Introduction to Gender	3
			Total Credit Units For Year I	**47**
YEAR TWO	ONE		**All Core Courses**	
		CMG 2108	Construction Materials	4
		LAW 2120	Labour Law for Construction	3
		QUS 2102	Construction Technology II	4
		CMG 2109	Construction Management 1I	4
		TEC 2101	Sociology for Technology*	3
		CIV 2107	Strength of Materials	3
				21
	TWO		**All Core Courses**	
		LAW 2220	Commercial Law for Construction	3
		CMG 2207	Cost Engineering	3

		CMG 2203	Measurement and Design Appraisal 1	4
		QUS 2208	Building Services	3
		LEC 3207	Research Methods & Statistics	3
		SUV 2206	Land Surveying for Construction	3
				19
	RECESS PERIOD	CMG 2301	Industrial Training	2
			Total Credit Units For Year II	**42**
YEAR THREE	ONE		**All Core Courses**	
		QUS 3106	Construction Technology III	4
		CMG 3102	Construction Costing*	4
		CMG 3103	Measurement and Design Appraisal II	4
		CMG 3106	Professional Communication	3
		CMG 3107	Maintenance Management	3
		CMG 3108	Elements of Highway Engineering	3
				21
	TWO		**All Core Courses**	
		CMG 3200	Final Year Project	5
		COE 3230	Entrepreneurship	4
		CMG 3206	Professional Practice, Procedure & Ethics 45	3
		QUS 3207	Construction Contract Administration	4
		CMG 3205	Construction Marketing	3
				19
			Total Credit Units For Year I11	**40**
			Minimum graduation load	**129**



School of Engineering

- Department of Civil and Environmental Engineering
- Department of Electrical and Computer Engineering
- Department of Mechanical Engineering

Word from the Dean

School of Engineering

Welcome to the School of Engineering

The School of Engineering houses the three traditional Engineering Departments in Makerere University. These are,

1. Department of Civil and Environmental Engineering
2. Department of Electrical and Computer Engineering
3. Department of Mechanical Engineering

Our vision is to be the leading school in Engineering Education and Research innovations in Africa. Our mission is to graduate engineers who are well founded in engineering fundamentals, blended with the highest standards of professional and ethical behavior, and are prepared to meet the market technical challenges and the needs of the society. We are committed to:

- Supporting excellence, innovation and cross-disciplinary initiatives in teaching and research.
- Encouraging opportunities for our students to grow beyond their chosen disciplines by participating in industry-sponsored projects, exchange programs, and research activities.
- Providing an academic environment conducive to our staff achieving the highest levels of academic and research excellence.
- Continuing to be the top engineering school in the region.
- Providing national leadership in undergraduate and graduate engineering education.

The School offers both undergraduate and graduate programs in various engineering disciplines including of civil, electrical, computer and mechanical engineering. Our staff constitute some of the best and most respected in Africa in their respective fields. They are dedicated to teaching, research, and services to the university and society. Our programs are regularly reviewed by the Uganda National Council for Higher Education (NCHE) whose criteria are in conformance with the Washington Accord. Engineering is a field of its own. It is challenging, demanding and time-consuming.

Above all, it is rewarding and providing its practitioners with an opportunity to serve the society. If you are considering joining this important field, our engineering family at Makerere University will offer you the best knowledge and skills.

Dr. Umaru Bagampadde
bumaru@tech.mak.ac.ug

Word from the Chair

Department Civil of Engineering

The Department of Civil and Environmental Engineering, formerly the Department of Civil Engineering was established in 1970 alongside Electrical and Mechanical Engineering with a specific mandate of educating civil engineers in the country to the highest international professional standards.

The Department's Mission Statement is: "To provide quality education in Civil Engineering by supporting academic distinction and excellence in teaching, innovative research and technological services in the region."

Focus is on harnessing the creativity of civil engineering in conception, planning, designing, constructing, evaluating performance and maintaining physical systems that sustain human enterprise. Students are prepared for professional practice in the major areas of Civil Engineering namely: Traffic and Transportation Engineering, Highway Engineering, Water Resources Engineering (Hydraulics, Hydrology, Hydro-informatics and River Engineering), Structural Dynamics and Engineering, Public Health and Environmental Engineering, as well as Geotechnical Engineering. The Department of Civil and Environmental Engineering boasts of highly qualified human resources that train the students to the highest academic standards comparable to those of highly ranked Universities in Africa and the world.

Programmes offered under the department include; Bachelor of Science in Civil Engineering , Diploma in Civil Engineering and Surveying.

Dr. Charles B. Niwagaba
cniwagaba@tech.mak.ac.ug

Programme

Bachelor of Science in Civil Engineering

Objectives of the Programme

The BSc.Civil Engineering Degree programme aims at producing professionals who will address the most basic needs of society that is, conceive, plan, design, construct and maintain the physical systems that sustain human enterprise and meet national development objectives.

The educational objectives of this programme are to:

- Train and produce graduates who are well grounded with skills and knowledge of the in Civil Engineering discipline
- Train students in aspects of research and development
- Instil entrepreneurship skills in students so as to ensure competitiveness
- Employ practical thinking with commitment to economic, innovative and optimum use of resources
- Train engineers who are aware of the latest global challenges and how to handle them
- Promote professionalism, work ethics and social values
- Have a good understanding of the technical vocational foundation of Civil Engineering to facilitate self-learning and professional development.

Programme structure

Programme duration - **4 years**

Minimum graduation requirement - **161 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		EMT1101	Engineering Mathematics I	4
		CIV1101	Civil Engineering Drawing	3
		CIV1102	Introduction to Civil Engineering	3
		EMT1104	Information and Communication Technology I	4
		CIV1103	Statistics &Dynamics for Civil Engineers	3

		TEC 1101	Communication Skills for Technology	3
				20
	TWO		**All Core Courses**	
		EMT 1201	Engineering Mathematics II	4
		CIV 1201	Strength of Materials	4
		EMT 1202	Information and Communication Technology II	4
		CIV 1202	Fluid Mechanics for civil engineers	3
		CIV 1203	Electrical Engineering for civil engineers	3
				18
	RECESS PERIOD	TEC1301	Workshop Practice	2
			Total CUs for year 1	**40**
YEAR TWO	ONE		**All Core Courses**	
		EMT2101	Engineering Mathematics III	4
		CIV2101	Theory of Structures I	3
		CIV2102	Engineering Geology	3
		CIV2103	Engineering Surveying I	4
		CIV2104	Hydraulics	4
			Elective Courses (Choose 1 Course)	
		CIV2105	Thermodynamics for Civil engineers	2
		TEC2101	Sociology for Technology	3
				21
	TWO		**All Core Courses**	
		EMT2201	Engineering Mathematics IV	3
		CIV2201	Soil Mechanics	4

		CIV2202	Theory of Structures II	3
		CIV2203	Civil Engineering Materials	4
		CIV2204	Engineering Surveying II	4
		CIV2205	Economics for Civil Engineering	3
				21
	RECESS PERIOD	CIV2301	Industrial Training I	2
			Total Credit Units For Year II	**44**
YEAR THREE	ONE		**All Core Courses**	
		CIV 3101	Organisational Theory for Engineering	3
		CIV 3102	Design of Structures I (Concrete)	4
		CIV 3103	Highway Engineering	4
		CIV 3104	Hydrology	4
		CIV 3105	Construction Technology	3
			Elective Courses (Choose 1 Course)	
		CIV 3106	Civil Engineering Environmental Chemistry	3
		CIV 3107	Principles of Quantity surveying	3
				21
	TWO		**All Core Courses**	
		CIV 3201	Foundation Engineering	4
		CIV 3200	Group Design Project	4
		CIV 3203	Design of Structures II (Steel)	4
		CIV 3204	Water Resources Engineering I	4
		CIV 3205	Public Health Engineering I	4
				20

	RECESS PERIOD	CIV3301	Industrial Training II	2
			Total Credit Units For Year III	**43**
YEAR FOUR	ONE		**All Core Courses**	
		CIV4101	Civil Engineering Management	3
		CIV4100	Civil Engineering Project I	2
		CIV4102	Civil Engineering Infrastructure Maintenance	3
		CIV4103	Traffic and Transportation Engineering	3
		CIV4104	Public Health Engineering II	4
			Elective Courses (Choose 1 Course)	
		CIV4105	Design of Structures III (Timber and Masonry)	3
		CIV4106	Hydrology II	3
				18
	TWO		**All Core Courses**	
		CIV 4200	Civil Engineering Project II	4
		CIV 4201	Civil Engineering Law	4
			Elective Courses (Choose 3 Courses)	
		CIV 4202	Water Resources Engineering II	3
		CIV 4203	Civil Engineering Economy	3
		CIV 4206	Civil Engineering Environmental Quality Management	3
		CIV 4204	Introductory Dynamics of Structures	3
		CIV 4209	Human Resources Management and Entrepreneurship	3
				17
			Total Credit Units For Year IV	**35**
			Minimum graduation load	**162**

Programme

Diploma in Civil Engineering & Surveying

Objectives of the Programme

The main objective of the programme of Civil Engineering Surveying is to educate students in order for them to achieve sufficient knowledge, skills and width of view to meet the demands of the job market and the national development objectives.

Educational Objectives

Specifically, the programme is intended:

- To train and produce diploma graduates who are well grounded with skills and knowledge in the Civil Engineering Surveying discipline;
- To train students towards research and development;
- To instil entrepreneurial skills in students so as to ensure competitiveness;
- Employ practical thinking with commitment to economic, innovative and optimum use of resources;
- Train engineering surveyors who are aware of the latest global challenges and how to handle them.

Programme structure

Programme duration - **2 years**

Minimum graduation requirement - **79 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		CES 1101	Preliminary Surveying I	2
		CES 1102	Reading the Field (feasibility, preliminary design)	4
		CES 1103	Environmental Studies I	2
		TEC 1101	Communication Skills for Technology	3
		CES 1104	Introduction to Data Collection	3

		CES 1105	Chainman Practice	4
		CES 1107	Journal, Double Entry Book-keeping	2
				20
	TWO		**All Core Courses**	
		CES 1201	Preliminary Surveying II	2
		CES 1202	Reading the Field (final design, construction) (prerequisite CES 1102)	4
		CES 1203	Computer Studies I	4
		CES 1204	Data Collection (x y z fix)	3
		CES 1205	Leveller Practice (prerequisite CES1105)	4
		CES 1207	Materials	2
		CES 1208	Local Knowledge, Design Criteria	2
				21
	RECESS PERIOD	CES 1301	Industrial Attachment	5
			Total Credit Units For Year I	**46**
YEAR TWO	ONE		**All Core Courses**	
		CES 2102	Reading the Field III (maintenance, rehabilitation) (prerequisite CES1202)	4
		CES 2103	Computer Studies II	2
		CES 2104	Data Collection (instrument use and booking)	2
		CES 2105	Survey Assistant Practice (prerequisite CES1205)	4
		CES 2107	Insurance for Civil Engineering Surveyors	2
		TEC 2101	Sociology for Technology	3
				17
	TWO		**All Core Courses**	
		CES 2201	Data Presentation	2

		CES2202	Reading the Field (mutual influences) (prerequisite CES2102)	4
		CES2203	Environmental Studies II	2
		CES2204	Data Collection (further instruments and methods)	2
		CES2205	Junior Surveyor Practice (prerequisite CES2105)	4
		CES2207	Law for Civil Engineering Surveyors	2
				16
			Total credit units for year II	**33**
			Minimum graduation load	**79**

Word from the Chair

Department of Electrical and Computer Engineering

The department was established in the 1970s evolving from the single degree in Electrical Engineering to three programs; BSc Electrical Engineering, BSc Telecommunication Engineering and BSc Computer Engineering. The Department offers a variety of study fields ranging from power systems engineering, electronics, control systems, communication systems, and telecommunications amongst others BSc Electrical Engineering deals with the study and application of electricity, electronics and electromagnetism; BSc Computer Engineering covers the physical aspects of computer and communication systems and BSc Telecommunications Engineering, which is in the field of electrical engineering, focuses on the design and oversees construction of electronic equipment to create communication links (wired or wireless).
Each of the programs has an average annual intake of eighty (80) students. Our specialized facilities like the electronics laboratory and power systems laboratory enable students to have hands-on experience, further enhancing their skills.

The Bachelor of Science in Electrical Engineering and Bachelor of Science in Telecommunication Engineering programmes were revised and the new curriculum is currently in its second year running.
Two new Master of Science programmes; Master of Science in Power Systems Engineering and Master of Science in Telecommunication Engineering have been approved to replace the Master of Science in Electrical Engineering and Master of Engineering in Electrical Engineering programs which will commence in the academic year of 2012/2013.

Dr. Julius Butime

Programme

Bachelor of Science in Electrical Engineering

Objectives of the Programme

The primary focus of this programme is to produce entrepreneurship-oriented graduates who are capable of propping up new companies, out of the prototypes that they will have developed at the undergraduate level. This demands that the final year projects should benchmark world class standards, capable of leading to Electrical Engineering incubations.

Educational Objectives

The educational objectives of this programme are to:

- Produce graduates who are able to practice electrical engineering to serve Uganda and the regional industries, government agencies, or national and international industries.
- Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: Power systems generation, transmission and distribution, industrial electronics, renewable energy solutions, system integration, electronic design automation.
- Prepare graduates for personal and professional success with awareness and commitment to their ethical and social responsibilities, both as individuals and in team environments.
- Prepare graduates who are capable of entering and succeeding in an advanced degree program in a field such as engineering, science, or business.

Programme structure

Programme duration - **4 years**
Minimum graduation requirement - **156 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		EMT 1101	Engineering Mathematics I	4
		ELE 1105	Circuit Theory	4

		ELE 1104	Physical Electronics	4
		CMP 1103	Information & Communications Technology	4
		ELE 1106	Introduction To Electrical Engineering	2
		UNV 1001	Communications Skills	3
				21
	TWO		**All Core Courses**	
		EMT 1201	Engineering Mathematics II	4
		ELE 1201	Introduction To Digital Electronics	4
		ELE 1205	Electrical Materials	4
		CMP 1205	Computer Programming Fundamentals	4
		ELE 1206	Statics & Dynamics	2
		TEC 1202	Introduction To Sociology	3
				21
	RECESS PERIOD	ELE 1301	Vocation Workshop Practice	3
		ELE 1302	E Lec Eng Drawing & Installation Practice	4
				7
			Total CUs for year 1	**49**
YEAR TWO	ONE		**All Core Courses**	
		EMT 2101	Engineering Mathematics III	4
		ELE 2112	Electromagnetics	4
		ELE 2102	Electronic Circuits	4
		ELE 2111	Network Theory	4
		CMP 2103	Object Oriented Programming	4
				20

	TWO		**All Core Courses**	
		EMT 2201	Engineering Mathematics IV	4
		ELE 2211	Electromagnetic Fields	4
		ELE 2212	Electrical Energy Systems	3
		ELE 2213	Instrumentation	4
		TEC 2202	Technology, Ethics & Human Rights	3
				18
	RECESS PERIOD	ELE 2302	Industrial Training	3
			Total Credit Units For Year II	**41**
YEAR THREE	At Least 4 Courses, including 2 From Chosen Concentration & other 2 courses			
	ONE	**Electronic Engineering Concentration**		
		ELE 3110	Applied Analogue	4
		ELE 3102	Applied Digital Electronics	4
		Power System Engineering Concentration		
		ELE 3113	Power Systems Theory	4
		ELE 3114	Electrical Machines & Drives I	4
		Elective Courses		
		TEL 3111	Communication Theory	4
		TEL 3112	Radio Wave Propagation & Antennas	4
		LAW 3123	Law Of Contracts	4
		COE 3100	Entrepreneurship	3
				15
	At Least 4 Courses, including 3 From Chosen Concentration & one other course			
	TWO	**Electronic Engineering Concentration**		

		ELE 3208	Control Engineering	4
		ELE 3211	Industrial Electronics	4
		ELE 3214	Computer Communication Networks	4
		Power System Engineering Concentration		
		ELE 3215	Power Systems Engineering	4
		ELE 3216	Energy Conversion And Generation	4
		ELE 3209	Electrical Machines & Drives II	4
		Elective Courses		
		TEL 3212	Digital Communications	4
		TEL 3213	Mobile Communications Systems	4
		TEL 3214	Computer Communication Networks	4
		TEL 3217	Systems Engineering	4
		COE 3200	Fundamental Accounts Principles	4
				16
	RECESS PERIOD	ELE 3301	Industrial Training	3
			TOTAL CREDIT UNITS FOR YEAR III	**34**
YEAR FOUR	At Least 4 Courses, including 2 From Chosen Concentration and other 2 courses			
	ONE			
		Electronic Engineering Concentration		
		TEL 4111	Digital Signal Processing	4
		ELE 4112	Microprocessor Based Systems	4
		Power System Engineering Concentration		

		ELE 4115	Power System Protection & Coordination	4
		ELE 4116	Electrical Installation Design	4
		Electives		
		TEL 4113	Optical Communications	4
		TEL 4114	Television And Video Engineering	4
		ELE 4117	Engineering Project Management	4
				16
	TWO	At Least 4 Courses, including 2 From Chosen Concentration, a Project and 1 other course		
		ELE 4212	Electrical Engineering Project (core)	5
		Electronic Engineering Concentration		
		ELE 4211	VIsic Design & Fabrication	4
		TEL 4213	Radio Frequency & Microwave Engineering	4
		Power System Engineering Concentration		
		ELE 4209	High Voltage Engineering	4
		ELE 4214	Power Economics And Management	4
		Elective Courses		
		TEL 4212	Satellite Communications	4
		TEL 4215	Broadband And Advanced Communications	3
		ELE 4216	Advanced Topics In Electronic Engineering	3
		ELE 4217	Advanced Topics In Power Engineering	3
		BAM 4200	Business Management	4
				16
			Total Credit Units For Year IV	**32**
			Minimum graduation load	**156**

Programme

Bachelor of Science in Telecommunication Engineering

Objectives of the Programme

The primary focus of this programme is to produce entrepreneurship-oriented graduates who are capable of propping up new companies, out of the prototypes that they will have developed at the undergraduate level. This demands that the final year projects should benchmark world class standards, capable of leading to Telecommunication Engineering incubations.

Educational Objectives

The educational objectives of this programme are to:

- Produce graduates who are able to practice Telecommunication engineering to serve Uganda and the regional industries, government agencies, or national and international industries.
- Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: telecommunication hardware and software design, computer network design, telecommunication system design and integration in wire line, mobile and satellite systems.
- Prepare graduates for personal and professional success with awareness and commitment to their ethical and social responsibilities, both as individuals and in team environments.
- Prepare graduates who are capable of entering and succeeding in an advanced degree program in a field such as engineering, science, or business.

Programme structure

Programme duration - **4 years**

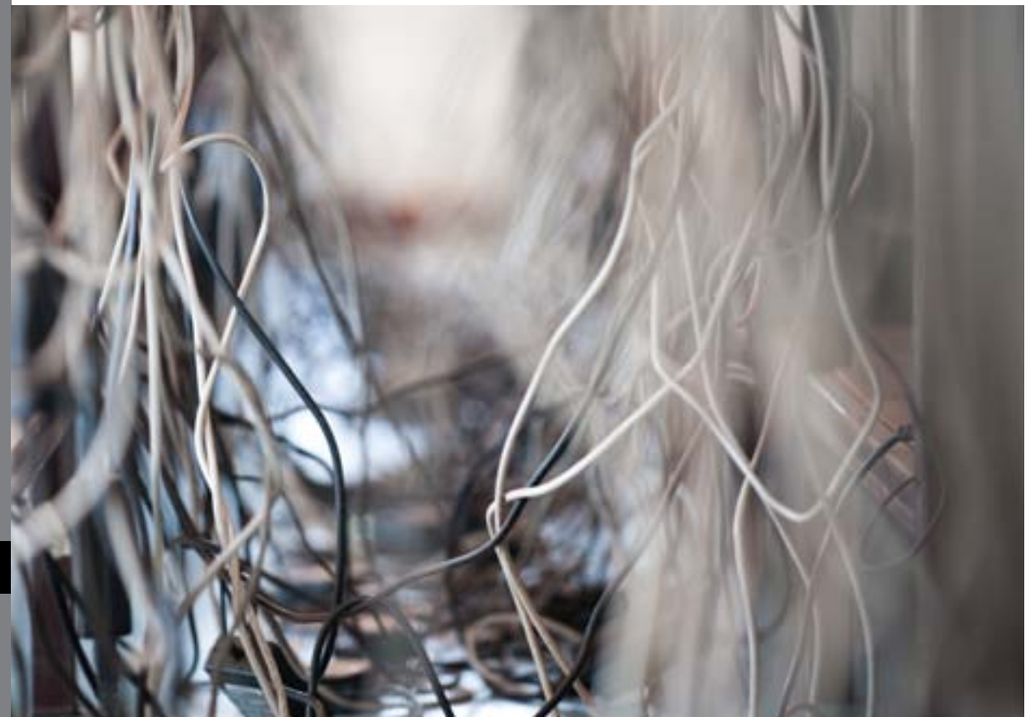
Minimum graduation requirement - **156 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		EMT 1101	Engineering Mathematics I	4
		ELE 1105	Circuit Theory	4
		ELE 1104	Physical Electronics	4
		CMP 1103	Information & Communications Technology	4
		ELE 1106	Introduction To Electrical Engineering	2
		UNV 1001	Communications Skills	3
				21
	TWO		**All Core Courses**	
		EMT 1201	Engineering Mathematics II	4
		ELE 1201	Introduction To Digital Electronics	4
		ELE 1205	Electrical Materials	4
		CMP 1205	Computer Programming Fundamentals	4
		ELE 1206	Statics & Dynamics	2
		TEC 1202	Introduction To Sociology	3
				21
	RECESS PERIOD	ELE 1301	Vocation Workshop Practice	3
		ELE 1302	E Lec Eng Drawing & Installation Practice	4
				7
			Total CUs for year 1	**49**
YEAR TWO	ONE		**All Core Courses**	
		EMT 2101	Engineering Mathematics III	4
		ELE 2112	Electromagnetics	4
		ELE 2102	Electronic Circuits	4
		ELE 2111	Network Theory	4
		CMP 2103	Object Oriented Programming	4
				20

	TWO		**All Core Courses**	
		ELE 2201	Engineering Mathematics IV	4
		ELE 2211	Electromagnetic Fields	4
		ELE 2212	Electrical Energy Systems	3
		ELE 2213	Instrumentation	4
		TEC 2202	Technology, Ethics & Human Rights	3
				18
	RECESS PERIOD	ELE 2301	Industrial Training	3
			Total Credit Units For Year II	**41**
YEAR THREE	At Least 4 Courses In Total			
	ONE		**All Core Courses**	
		TEL 3111	Communication Theory	4
		TEL 3112	Radio Wave Propagation & Antennas	4
		ELE 3102	Applied Digital Electronics	4
		Elective Courses (Choose atleast one)		
		ELE 3103	Applied Analogue Electronics	4
		LAW 3123	Law Of Contracts	4
		COE 3100	Entrepreneurship	3
				15
	At Least 4 Courses In Total			
	TWO		**All Core Courses**	
		TEL 3212	Digital Communications	4
		TEL 3213	Mobile Communications Systems	4
		TEL 3214	Computer Communication Networks	4

		Elective Courses (Choose atleast one)		
		ELE 3208	Control Engineering	4
		TEL 3217	Systems Engineering	4
		COE 3200	Fundamental Accounts Principles	4
				16
	RECESS PERIOD	ELE 3301	Industrial Training	3
			Total credit units for year III	**34**
YEAR FOUR	At Least 4 Courses In Total			
	ONE		**All Core Courses**	
		TEL 4113	Optical Communications	4
		TEL 4114	Television And Video Engineering	4
		Elective Courses (Choose one)		
		TEL 4111	Digital Signal Processing	4
		ELE 4112	Microprocessor Based Systems	4
		ELE 4116	Electrical Installation Design	4
		ELE 4117	Engineering Project Management (3,0,3)	4
				16
	TWO	At Least 4 Courses In Total		
			All Core Courses	
		TEL 4206	Telecommunication Engineering Project	5
		TEL 4212	Satellite Communications	4
		TEL 4213	Radio Frequency & Microwave Engineering	4

		Elective Courses (choose atleast one)		
		TEL 4215	Broadband And Advanced Communications	3
		ELE 4211	VIsic Design & Fabrication	4
		BAM 4200	Business Management	4
				16
			Total Credit Units For Year IV	**32**
			Minimum graduation load	**156**



Programme

Bachelor of Science in Computer Engineering

Objectives of the Programme

The primary focus of this programme is to produce entrepreneurship-oriented graduates who are capable of propping up new companies, out of the prototypes that they will have developed at theundergraduate level. This demands that the final year projects should benchmark world class standards, capable of leading to Computer Engineering and Information and Communication Technologies incubations.

Educational Objectives

The educational objectives of this programme are to:

- Produce graduates who are able to practice computer engineering to serve Uganda and the regional industries, government agencies, or national and international industries.
- Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: computer hardware and software design, computerbased systems, computer network design, system integration, electronic design automation.
- Prepare graduates for personal and professional success with awareness and commitment to their ethical and social responsibilities, both as individuals and in team environments.
- Prepare graduates who are capable of entering and succeeding in an advanced degree program in a field such as engineering, science, or business.

Programme Structure

Programme duration - **4 years**

Minimum graduation requirement - **144 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		EMT1101	Engineering Mathematics I	4
		CMP 1103	Information and Communications Technology	4

		CMP 1101	Electronics I	4
		TEC 1101	Communication Skills for technology	3
		CMP 1102	Computer Engineering Ethics	3
				18
	TWO		**All Core Courses**	
		EMT 1201	Engineering Mathematics II	4
		CMP 1201	Computer Programming Fundamentals	4
		CMP 1202	Electronics II	4
		CMP 1203	Computer Architecture and Organization	4
		CMP 1204	Electricity and Magnetism	4
				20
	RECESS PERIOD	ELE 3301	Workshop Practice(Core Course)	2
			Total CUs for year 1	**40**
YEAR TWO	ONE		**All Core Courses**	
		EMT 2101	Engineering Mathematics III	4
		CMP 2101	Software Engineering	4
		CMP 2102	Electric Circuits and Signals	4
		CMP 2103	Object Oriented Programming	4
		TEC 2101	Sociology for Technology	3
				19
	TWO		**All Core Courses**	
		CMP 2201	Discrete Mathematics and Random Processes	4
		CMP 2202	Analysis and Design of Algorithms	3
		CMP 2203	Digital Logic	4

		CMP 2204	Operating Systems Technologies	4
		CMP 2205	Computer Networks	4
				19
	RECESS PERIOD	CMP 2301	Industrial Training	2
			Total Credit Units For Year II	**40**
YEAR THREE	At Least 4 Courses In Total			
	ONE		**All Core Courses**	
		ELE 3101	Electromagnetic Fields	4
		ELE 3102	Applied Digital Electronics	4
		CMP 3101	Database Systems	4
		Elective Courses (Choose atleast one)		
		EMT3102	Partial Differential Equations	4
		CMP3103	Computer Games Development	4
		CMP3104	Computer Based Medical Systems	4
		ELE3103	Applied Analogue Electronics	4
				16
	TWO		**All Core Courses**	
		CMP3201	Embedded Systems	4
		CMP3202	Human Computer Interaction	4
		CMP3203	Computer Systems Maintenance	4
		Elective Courses (Choose atleast one)		
		CMP3204	Distributed Information Systems	4
		CMP3205	Intelligent Systems	4
		CMP3206	Safety Critical System	4
		CMP3207	Sustainable Energy Systems	4

				16
	RECESS PERIOD	CMP3301	Industrial Training	2
			Total credit units for year III	**34**
YEAR FOUR				
	ONE		**All Core Courses**	
		TEC4101	Research Methods	4
		CMP4101	Digital Signal Processing	4
		CMP4102	Instrumentation and Control Engineering	4
		Elective Courses (Choose atleast one)		
		TEC4102	Principles of Management	3
		CMP4103	Computer Systems and Network Security	3
		CMP4104	Digital Image and Video Processing	3
				15
	TWO		**All Core Courses**	
		TEC4201	Entrepreneurship	4
		CMP4201	Research Project	4
		CMP4202	VLSI Systems Design	4
		Elective Courses (Choose atleast one)		
		CMP4203	Lasers and Photonics	3
		CMP4204	Wireless Technologies	3
		CMP4205	Audio and Speech Signal Processing	3
			Total Credit Units For Year IV	**30**
			Minimum graduation load	**144**

Word from the Chair

Department of Mechanical Engineering

The Mechanical Engineering department started in 1970, making it one of the oldest departments at the college. The department presently runs only one undergraduate programme, that is, Bachelor of Science in Mechanical Engineering.

Mechanical Engineering is an engineering discipline that involves the application of principles of physics and chemistry for analysis, design, manufacturing, and maintenance of various systems. Subsequently, the students in this department are trained to harness existing modern technologies to design, build and analyze mechanical structures such as industrial plant components, industrial equipment and machinery, motor vehicles and heating and cooling systems.

Currently, the Department has the following laboratories and workshops available to its undergraduate students: Mechanical Workshop, Metrology Laboratory, Fluids Laboratory, Thermodynamics Laboratory, Strength of materials Laboratory, Metallurgy Laboratory, Mechanics of Machines Laboratory, Drawing Rooms.

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Programme

Bachelor of Science in Mechanical Engineering

Educational Objectives

The objectives of the Mechanical Engineering Education programme at College of Engineering, Design, Art and Technology (CEDAT) are;

- Provide students with the fundamental technical knowledge and skills in mathematics, science, and engineering design technology in order to recognize, analyze and solve problems for current day problems
- To provide students with the skills required to work effectively as individuals and in teams, as leaders and followers and to make profitable decisions for the organisations and communities that they are or will be a part of
- To provide students with an opportunity and environment necessary to participate in hands-on engineering that leads to an appreciation of the business and entrepreneurial aspects of mechanical engineering
- To prepare graduates for personal and professional success with awareness and commitment to their ethical and social responsibilities, both as individuals and in team environments.
- Prepare graduates who are capable of entering and succeeding in an advanced degree program in a field such as engineering, science, or business.

Programme structure

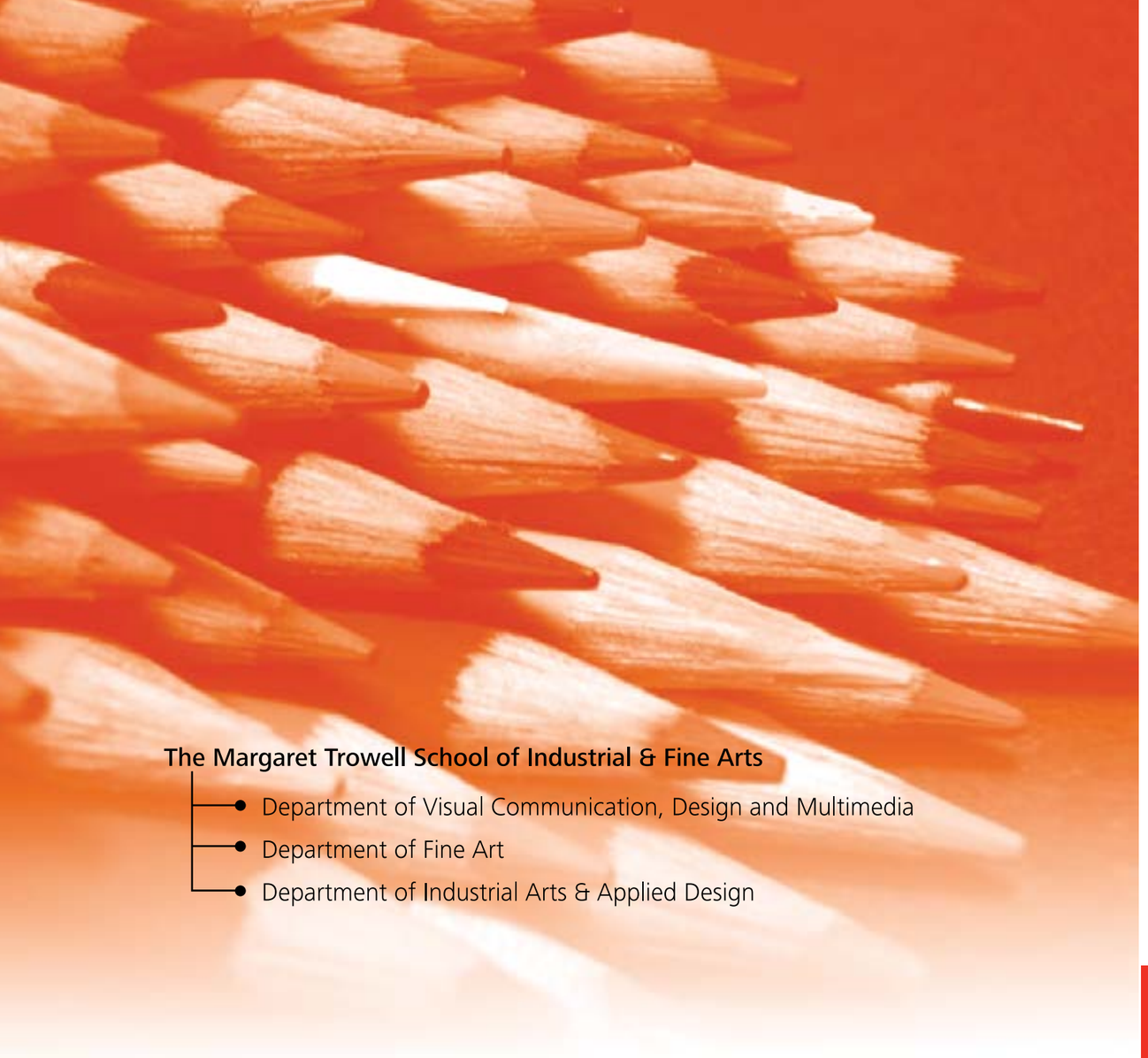
Programme duration - **4 years**

Minimum graduation requirement - **166 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		EMT 1101	Engineering Mathematics I	4
		MEC 1101	Engineering Drawing	4
		MEC 1102	Engineering Mechanics I	4
		MEC 1103	Electrical Engineering for Mechanical Engineers I	3
		UNV 1001	Communication Skills	3
				19
	TWO		**All Core Courses**	
		EMT 1 201	Engineering Mathematics II	4
		MEC 1201	Engineering Mechanics II	4
		EMT 1204	Information Communication Technology	4
		MEC 1203	Thermodynamics	4
		MEC 1204	Mechanics of Materials	4
				20
	RECESS PERIOD	TEC 1301	Workshop Practice	2
			Total CUs for year 1	**41**
YEAR TWO	ONE		**All Core Courses**	
		EMT2101	Engineering Mathematics III	4
		MEC2101	Fluid Mechanics for Mechanical Engineers I	4
		MEC2102	Mechanics of Materials II	4
		MEC2103	Computer Aided Design for Mechanical Engineers I	4
		TEC2101	Sociology for technology	3
				19
	TWO		**All Core Courses**	
		MEC 2201	Electrical Engineering II	4
		MEC 2202	Theory of Machine Elements	4
		MEC 2203	Computer Programming	4
		MEC 2204	Material Science and Engineering I	4
		MEC 2205	Fluid Mechanics II	4
				20
	RECESS PERIOD	MEC 2302	Industrial Training	4

			Total Credit Units For Year II	**43**
YEAR THREE				
	ONE		**All Core Courses**	
		MEC 3101	Materials Science and Engineering II	4
		MEC 3102	Engineering Management	4
		MEC 3103	Production Engineering I	4
		MEC 3104	Design of Machine Elements	4
		MEC 3105	Dynamic Systems Engineering	4
				20
	TWO		**All Core Courses**	
		MEC 3201	Maintenance Engineering	4
		MEC 3202	Production Engineering II	4
		MEC 3203	Product Design and Development	4
		MEC 3204	Heat Transfer	4
		MEC 3205	Control Systems Engineering	4
				20
	RECESS PERIOD	MEC 3302	Industrial Training	4
			Total credit units for year III	**44**
YEAR FOUR				
	ONE		**Core Courses**	
		MEC 4101	Business Management for Mechanical Engineers	4
		MEC 4102	Applied Thermodynamics	4
		MEC 4103	Production Planning and Control for mechanical engineers	4
		MEC 4104	Mechanical Engineering Project I	3
		Elective Courses (choose atleast one)		

		MEC 4105	Renewable Energy Technologies	4
		MEC 4106	Materials Handling	4
		MEC 4107	Welding Technology	4
		MEC 4108	Computer aided engineering for mechanical engineers	4
				19
	TWO		**Core Courses**	
		MEC 4201	Entrepreneurship for mechanical Engineers	4
		MEC 4202	Environmental Engineering	4
		MEC 4209	Mechanical Engineering Project II	4
		Elective Courses (choose at least two)		
		MEC 4205	Air Conditioning and Refrigeration	4
		MEC 4206	Fluid Power systems	4
		MEC 4207	Operations research and project management for Mechanical Engineers	4
		MEC 4204	Automotive Engineering	4
				20
			Total Credit Units For Year IV	**39**
			Minimum graduation load	**167**



The Margaret Trowell School of Industrial & Fine Arts

- Department of Visual Communication, Design and Multimedia
- Department of Fine Art
- Department of Industrial Arts & Applied Design

Word from the Dean

The Margaret Trowell School of Industrial & Fine Arts

Welcome to the Margaret Trowell School of Industrial and Fine Arts (MTSIFA). This is the oldest and most celebrated Art School in East Africa. Founded in 1937 by Mrs. Margaret Trowell, after whom it is named, MTSIFA has three departments: Fine Art; Industrial Arts and Applied Design; and Visual Communication Design and Multimedia as well as an Institute of Heritage Conservation and Restoration. It is a close-knit community of students and professionals that serves largely as an arts conservatory and centre of excellence in the arts for the East African region. MTSIFA currently offers programs in fine art and industrial design at Bachelors, Masters and PhD level. Our world-class academic staff comprised of practicing artists, art historians, art educators, designers, and cultural theorists, are dedicated to providing students with the tools, knowledge and resources that will help them find their own path to success.

The curriculum challenges students to explore critical aesthetic and community issues, and necessitates them to come up with individual art and design solutions. Through courses in business administration, finance and banking, and arts marketing, MTSIFA students learn to combine professional studio-practice with the entrepreneurial skills needed to build a successful career in the vibrant cultural sector while others use their creativity and business background to make a real contribution in the public sector, in their communities, and in their lives.

MTSIFA welcomes a diverse student body from across the region. I invite you to experience and explore all the creative possibilities available through our academic programs and research collaborations with other universities in USA, UK, Finland, South Africa, and Kenya.

Dr. Venny Nakazibwe, Dean

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Word from the Chair

Department of Visual Communication Design and Multimedia

The department of Visual Communication Design and Multimedia programmes provide a more in-depth understanding of the visual communication design field in relation to the ever-advancing modern design technology and industrial growth challenges in Uganda.

The Visual Communication Design and Multimedia programmes address specific demands and enable students cultivate a sense of focus and concentration in specialized design areas in order to ably serve and contribute to the community development. The deaprtment will soon start offering a Bachelor of Visual Communication Design and Multimedia. The programme provides learners with theory, practice and the modern technology. DVCDM houses areas of study that include animation, graphic design, sound production, 3D modelling, web site design, game design and interactive media design, social design, professional practice and management among others.

The department trains highly skilled and competent visual communication and multimedia personnel to serve in the different sectors of the economy including operations, research and training institutions.

Dr Phillip Kwesiga
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Word from the Chair

Department of Fine Art

Although the teaching methods have changed to suit the changing needs of the student, the aim of the department is still as Jonathan Kingdon explained 45 years ago – to develop the intrinsic talents of the students (who come from all races and backgrounds) and the direction of a students' work derived from his/[her] own choice and inner necessity.

The ultimate aim is to assist students to choose a direction based on their competence and desire. The courses in Fine Art can be divided into two broad distinctions. The more academic disciplines which include History of Art and Drawing while the professional disciplines include Painting, Sculpture, Stained Glass, Anatomy and Print making. This course which looks at the human figure and the general environment aims to develop insight into the richly varied nature of drawing through the students' own practice and a variety of exercises. The tropical environment, the cultural life as well as the bustling life of Kampala city and beyond are investigated through line, tone and colour. As well as feeding into professional courses, drawing can stand as an independent self-sustaining discipline.

With the increasing attention and interest of African Art particularly in Europe and America, the market for African Art is getting brighter. This is not to underestimate the local market which is also growing each day. New Art Galleries are opening up to take the growing number of artists looking for avenues to market their products. The deaprtment has proposed to start running a Bachelor of Fine Art.

Dr. Kizito Maria Kasule
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Word from the Chair

Department of Industrial Arts & Applied Design

The Department of Industrial Arts and Applied Design (DIAAD) was preceded by the Department of Industrial Arts and Design (DIAD). Created in 1995, DIAD had a mandate of training graduates who are responsive to community challenges and needs.

Established in 2010, the Department has inherited and widened this mandate. It has experienced and dedicated lecturers specialising in the theory and practice of ceramics, jewellery, fashion, metal and wood fabrication, textiles and weaving. It has improved the curriculum offered under the Bachelor of Industrial and Fine Art degree programme. It is also in the process of launching a Bachelor of Industrial Arts and Applied Design (BIAAD) degree programme.

Enriched by the inclusion of computer aided design, technical drawing, communication skills, governance, gender studies, entrepreneurship and business practice in the curriculum, this new programme will motivate talented students to excel.

Dr. Angelo Kakande

Programme

Bachelor of Industrial and Fine Art

Art and design as a human activity does involve aesthetic, intellectual, and practical skills, although to become broadly significant, it should interact with the content in other fields, especially science, comparative education and industrial studies in Studio Art/Industrial Design/ Museum and Gallery Management. Study trips, field attachments and theoretical courses in Art History and art criticism provide on-the-job, supervised, evaluated experiences which contribute to the student's overall education and development. Primary goals include improvement of art and design production and creative strategies, as well as museum and gallery management skills.

Programme structure

Programme duration - **3 years**

Minimum graduation requirement - **124 Credit Units**

YEAR	SEMESTER	COURSE CODE	COURSE NAME	Credit Units (CU)
YEAR ONE	ONE		**All Core Courses**	
		UNV 1001	Communication Skills	3
		IFA 1120	Introduction to Visual Arts	2
		IFA 1121	Design I - Black & White	2
		IFA 1122	Introduction to Drawing	2
		IFA 1123	Introduction to Business Administration	2
		IFA 1124	Pre-Historic to Byzantine	2
		Electives (Choose three)		
		IFA 1125	Introduction to Painting	2
		IFA1126	Introduction to Jewelry Making	2
		IFA1127	Introduction to Printmaking & Illustration	2
		IFA1128	Introduction to Textile Design & Technology	2

		IFA1129	Introduction to History of Art - Elective	2
		IFA1130	Introduction to Drawing - Elective	2
		IFA1131	Introduction to Ceramics	
		IFA1132	Introduction to Photography	2
		IFA1133	Introduction to Fashion Design	2
		IFA1134	Introduction to Communication Design	2
		IFA1135	Fundamentals of Sculpture	2
			Total credit units for Year one Semester One	**20**
	TWO		**Core course**	
		UNV 1002	Introduction to Gender	2
		IFA 1200	Drawing I	2
		IFA 1225	Principles and history of Art I	2
		IFA 1226	Finance and Banking	2
		IFA 1224	Research methods	2
		Elective Courses (Choose three)		
		IFA1205	Water Colour Painting I	3
		IFA1206	Art Appreciation	3
		IFA1218	Jewelry Making I	3
		IFA1219	Sculpture Fabrication I	3
		IFA1220	Sculpture Carving & Modelling I	3
		IFA 1222	Lettering	3
		IFA 1223	Fashion Design I	3
		IFA1227	Photography I	3
		IFA1228	Structural Textile Design & Technology I	3

		IFA 1229	Printmaking & Illustration I	3
		IFA1230	Industrial Ceramics I	3
		IFA1231	Oil Painting I	3
		IFA1232	Drawing - Elective I	3
		IFA1233	Applied Textile Design & Technology I	3
				19
			Total Credit units for Year One	**40**
YEAR TWO	ONE		**All Core Courses**	
		IFA2101	Design II Elements	3
		IFA2123	Field Research	3
		IFA2124	Intermediate Drawing	2
		IFA2125	Marketing I	2
		IFA2126	Western Art: Medieval Through Rococo	2
		Elective Courses (Choose three)		
		IFA2122	Layout	3
		IFA2127	Intermediate Oil Painting	3
		IFA2128	Intermediate Jewelry Making	3
		IFA2129	Relief Printing & Editorial Illustration	3
		IFA 2130	Intermediate Applied Textile Design	3
		IFA2131	Intermediate Water Colour Painting	3
		IFA2132	History of Art - Elective I	3
		IFA2133	Intermediate Drawing - Elective	3
		IFA2134	Intermediate Ceramics	3
		IFA2135	Intermediate Photography	3

		IFA2136	Intermediate Structural Textile Design	3
		IFA2137	Intermediate Sculpture Fabrication	3
		IFA2138	Sculpture Carving & Modelling	3
		IFA2139	Intermediate Fashion Design	3
				21
YEAR TWO	TWO		**All Core Courses**	
		IFA2200	Drawing II	2
		IFA2223	Research Report	2
		IFA2224	Principles and History of Art II	2
		IFA2225	Marketing II	2
		IFA2226	Design Computing	3
		Elective Courses (Choose three)		
		IFA2205	Oil Painting II	3
		IFA2216	Advertising Design I	3
		IFA2227	Art Theory & Criticism	3
		IFA2228	Photography II	3
		IFA2229	Water Colour Painting II	3
		IFA2230	Printmaking & Illustration II	3
		IFA2231	Industrial Ceramics II	3
		IFA2232	Drawing – Elective II	3
		IFA2233	Fashion Design II	3
		IFA2234	Jewelry Making II	3
		IFA 2235	Structural Textile Design II	3
		IFA2236	Sculpture Fabrication II	3

		IFA2237	Sculpture Carving & Modeling II	3
		IFA2238	Applied Textile Design II	3
				20
	RECESS PERIOD	IFA 2302	Field Attachment	4
			Total Credit units for Year Two	**45**
YEAR THREE	ONE		**All Core Courses**	
		IFA3122	Advanced Drawing III	3
		IFA3123	Western Art: Neo- Classicism to Present & East Africa	3
		Elective Courses (Choose three)		
		IFA3105	Typographic Design	4
		IFA3124	Advanced Oil Painting	4
		IFA3125	Advanced Jewelry Making	4
		IFA3126	Printmaking - Etching	4
		IFA3127	Advanced Water Colour Painting	4
		IFA3128	History of Art - Elective II	4
		IFA3129	Advanced Drawing - Elective	4
		IFA3130	Advanced Ceramics	4
		IFA3131	Advanced Photography	4
		IFA3132	Advanced Structural Textile Design	4
		IFA3133	Advanced Fashion Design	4
		IFA3134	Advertising Illustration	4
		IFA 3135	Advanced Sculpture Fabrication	4
		IFA 3136	Sculpture Carving and Modelling	4
		IFA 3137	Advanced Applied Textile Design	4
				18

	TWO		**All Core Courses**	
		IFA 3202	Principles and History of Art III	2
		IFA 3225	Exhibition	2
		IFA 3204	Major Work	3
		IFA 3200	Drawing III	2
		Elective Courses (Choose three)		
		IFA 3227	Oil Painting - Project(s)	4
		IFA 3228	Illustration - Project(s)	4
		IFA3229	Water Colour Painting - Project(s)	4
		IFA3230	Printmaking - Project(s)	4
		IFA3231	Ceramics - Project(s)	4
		IFA3232	Advertising Design II	4
		IFA3233	Drawing - Elective (Projects)	4
		IFA3234	Design Communication	4
		IFA3235	Jewelry Making - Project(s)	4
		IFA3236	Photography - Project(s)	4
		IFA3237	Fashion Design - Project(s)	4
		IFA3238	Sculpture Fabrication - Project(s)	4
		IFA3239	Applied Textile Design - Project(s)	4
		IFA3240	Sculpture Carving & Modelling - Project(s)	4
		IFA 3241	African Art and Modernization	4
		IFA 3242	Structural Textile Design - Project(s)	4
				21
			Total Credit Units For Year three	**39**
			Minimum graduation load	**123**

Institute of Heritage Conservation and Restoration (IHCR)

THE INSTITUTE OF HERITAGE CONSERVATION AND RESTORATION.

Following the formation of the College of Engineering, Design, Art and Technology, the Makerere Art Gallery which was a constituent part of the School of Industrial and Fine Arts, was upgraded to the Institute of Heritage Conservation and Restoration.

The institute is currently run by a Director, Curator and two assistants. The institute is a home to a fine and extensive collection of art works from different disciplines and media collected since 1950. Many of these artworks have arisen from the artistic involvement with traditional materials and techniques, while others reflect cultural heritage such as indigenous traditions, patterns and beliefs. Its content revolves around political and cultural history, changes in society, influences of religion and intercultural exchanges.

Beyond keeping and documenting this collection, as well as organising regular shows, the institute has expanded its mandate to carrying out strategic research on Uganda's visual culture. Understanding how this culture is locally constituted will form the basis for developing educational and academic materials for use within the college as well as transfer partnership programs. It is now possible to intimately engage with art practitioners, collectors, connoisseurs as well as museum and art gallery directors in Uganda with the aim of improving the visibility of Ugandan art through knowledge generation and dissemination.

The institute is also taking in its fold the restoration of decaying art works in its care as well as their preservation.

Research & innovation

There are over 10 key advanced projects in the College, which highlight the potential of triggering an innovation process to propel Uganda into a real knowledge economy and the industrial world. These target human resource development, research to increase production, transfer of technologies between Higher Education Institutions and communities and increased relevance and knowledge generation by the CEDAT, Makerere University.





Academic Records Management Systems (ARMS) Project

http://arms.mak.ac.ug

The ARMS Project is a premier web systems Engineering research entity, actively promoting systematic, disciplined and quantifiable approaches toward successful development of high-quality and ubiquitous web systems. It was set up in 2007 although its foundation dates as far back as 1996. Its vision is to gain global acknowledgment by contributing meaningfully towards the development of a string of User-Centric Records Management software products for Institutions of Higher Education Using Cutting Edge Technologies.
The students under this project aim at ensuring better management of student and academic records in the university.

That is why last year alone, they were able to;

- A Pilot ARMS Data Centre Infrastructure was set up at CEDAT
- A student Enrolment Application was implemented and used for the enrolment of the Year 1 students in CEDAT; during which the Year 1 students were trained on how to use the Application.
- A College MIS Portal and Administrator's Portal in production Environment was established. In this, students and lecturers are able to check for information like the timetable, assessment, results etc. This Portal has also been developed to be accessed through mobile phones.
- Capacity Development for Graduate Research Assistants has been done through provision of partial and full scholarships to pursue Masters Courses, Certificate Courses and research.
- The project has also engaged in a training program for Electrical and Mechanical Students for sustainability pREPoses.
- The Project has also engaged in similar activities for organizations outside the University, for example, Uganda Police, Uganda National Bureau of Statistics and the Ministry of Finance, Planning and Economic Development.

ilabs@mak PROJECT

http://ilabs.mak.ac.ug

The iLabs@MAK Project started in 2004, and is implemented in collaboration with Massachusetts Institute of Technology (MIT)-USA, University of Dar es Salaam (UDSM)-Tanzania and Obafemi Awolowo University (OAU)-Nigeria. The project has developing remote laboratories (iLabs) to support curricula of the Computer, Electrical, and Telecommunications Engineering Undergraduate Programmes, offered at the CEDAT.

The iLabs facilitate flexible and convenient access to remotely deployed laboratory hardware, thus supplementing the limited conventional laboratories, at times providing the only means of experimentation. To date, 26 laboratories have been developed in the fields of analog and digital electronics, communications engineering and control systems engineering, with over 1200 students in CEDAT benefiting from the same.

The ilabs developed at Makerere University to date are;

- Digital Electronics (5)
- Communication Engineering (4)
- Basic Telephony (6)
- Fibre Optics Communications (2)
- Digital Signal Processing (2)
- Control Systems Engineering (3)
- Embedded Systems (4)

The project has not only extended to other universities such as Kyambogo and Busitema Universities but also to high schools such as Gayaza High and St. Mary's College Kisubi. The high school students have been able to develop and assemble robots using the iLabs.

The Technology Development and Transfer Centre (TDTC)

http://tdtc.mak.ac.ug

This Project was established in 2002. The main activities of TDTC are development and application of innovative technology, research and technology transfer with the aim of uplifting social-economic development of Uganda in sustainable manner. The TDTC is the backbone link between the community, industry and CEDAT.

Although Uganda is endowed with abundant natural resources, poverty still persists, particularly in the rural areas. The Government of Uganda, over the past decade put in great effort to improve the standard of living of the rural communities. However, this effort has not been accompanied by a matching transfer of technology to the communities. The TDTC would like to develop capacity in technical, socio-economic, cultural and political aspects of technology transfer from other countries to Uganda, and also within different parts of Uganda.
The project has achieved success in developing a locally made helmet suitable for the East African environment and temperature. The Helmet was designed in collaboration with Design without Borders, Richiencoy and Injury Control Centre Uganda.

They project has also designed and constructed solar water heaters. These are cheaper and help in the use of the vastly available and free Solar energy rather than the use of the hydro-power which is not enough for the population and is expensive to maintain. Other achievements include;

- Commercialization of display units. The centre has developed a strategy to help commercialize advertisement display units. The units developed use low consuming power lights and thus are pocket friendly.
- Design of a hybrid solar drier; It's been noted and found out that most farmers and producers are losing most of their produce because of poor drying methods. The centre aims to develop a prototype to help in the drying of fruits, thus preserved for future use and export out of the country. This Hybrid has been designed by the centre and it is called hybrid because in case the solar energy is not sufficient enough for a particular period, another means of Biomass usage can be applied.

Low Cost Irrigation Schemes Project

http://xxx.mak.ac.ug

The CEDAT under the Presidential Initiative in conjunction with Uganda Gatsby Trust is implementing this project with the aim of improving agriculture in Uganda, and making irrigation affordable to local farmers through;

- Design and manufacture of different low cost types of pumps and irrigation systems
- Modification of the existing pumps to suit local environment
- Testing the performance of the pumps on trails and modify them where necessary
- Proving the performance of manufactured irrigation systems on selected trial agricultural sites
- Training of the Small Scale Entrepreneurs to produce the pumps
- Rolling out of the irrigation technologies to rural communities

The Community Wireless Resource Centre Project

The Community Wireless Resource Centre (CWRC) is an initiative established in 2006, under the Department of Electrical Engineering. The primary objective of the CWRC is to provide or enhance sustainable Internet connectivity infrastructure, particularly in rural or underserved areas in Uganda, by means of wireless technology. The CWRC seeks to implement and support community wireless networks, train students and technical staff so as to build capacity in design, installation and maintenance of wireless networks, undertake research in the area of community wireless networks, and document and share results widely.
The CWRC contributes to capacity building in the Department of Electrical Engineering through research and through industrial training opportunities. The projects also takes on fourth year students doing research projects in areas of concern in the areas of community wireless networks such as bandwidth management, traffic shaping, and propagation.

Different telecentres (a centre where an internet dish is installed so that the surrounding areas can have access to wireless internet) were set up in Lira, Nakaseke, Kabale and Nabweru. These telecenters enable the small scale businesses around to have access to wireless internet and hence boost their businesses.

Vehicle Design Project

The Vehicle Design Project is an innovative research project aimed at applying contemporary technologies to develop sustainable transportation solutions for Uganda and Africa. The Project was inspired by the Vehicle Design Summit (VDS), an International Student-Led Consortium aimed at Leapfrogging Sustainable Transportation Technologies. In 2008, Vehicle Design Summit (VDS) Teams from 35 Pre-eminent Research Universities built a 5 seater Plug in Hybrid Electric Vehicle, The Vision 200 Led by Massachusetts Institute of Technology (MIT). Makerere University, the only African team, developed the Power Train and in-Vehicle Communication Network for the Vision 200.

The vision of the project is to be at the forefront of research and development of green transport technologies in Africa, while its mission is to carry out research aimed at development of cost effective and environmentally friendly transportation technologies for Africa.

The Vehicle Design team has finalised building a car with the following specifications;

- 2-Seater
- Purely Electric drive
- 3000mm long, wheel base 2175mm, 1600mm wide and 1500mm high
- Front wheel Drive
- Extruded hollow chassis
- Target Speed 60 km/hr and Range 50 Km
- Curb and Cargo weight is 500kgs and 200kgs respectively

MakaPads Project

For many girls in rural areas, menstruation means no school. MakaPads are used to meet this need in girls, by providing an effective low cost protection to every girl. Makapads are sanitary pads made from papyrus and paper waste. The fibers are beaten, dried and softened without the use of any electricity. They are assembled with moisture barrier and mesh covering. Various MakaPads production sites have been established in different places(Masaka, Mukono, Lugala & Masajja) that will be engaged in different processes of MakaPads production. Employment opportunities have been created i.e. a total 21 youth & women have been employed in the production of absorbent papers at the 4 new sites.

Centre for Research in Energy & Energy Conservation Project (CREEC)

http://www.creec.or.ug

The Centre for Research in Energy and Energy Conservation (CREEC) is an organization for research, training and consultancy with four focal areas: bio-energy, solar PV, pico-hydro and energy management

Under the Presidential Initiative CREEC is implementing a solar testing laboratory. The funding is meant for refurbishment of an existing space, procurement of solar testing equipment and training equipment, lap-tops as well as salary support of staff.

The main objective of the solar testing lab is to create a testing facility for equipment being used in solar PV applications. CREEC will be an independent test laboratory for both governmental and private sector organizations. Furthermore, the high tech and state-of-art facilities provide an excellent opportunity for CEDAT students to do their industrial training and/or final-year-projects.

Innovation Systems and Clusters Program

The Innovative Systems and Clusters Program (ISCP) was formed in 2005. It is a program that aims at making Uganda's businesses more competitive locally and globally, through innovations and cluster initiatives. The mission of the project is to enhance the competitiveness of Uganda's Businesses locally and globally through innovations systems and innovative cluster initiatives.

Under the cluster system, ISCP brings together groups of independent firms, collaborating and competing; geographically concentrated in one area, and are specialised in a particular field, linked by similar technologies or skills. The operations of the cluster system are centred on the triple helix as a major driver, which consists of three key players, namely; the Government, the academia/ universities and the private sector, including businesses especially Small and Medium Enterprises (SMEs). Innovative cluster initiatives are championed by trained facilitators, normally representing each component of the triple helix.

With support from the presidential fund a customized cluster development and management course has been developed and clusters are currently undergoing training. An average of 7 local facilitators per cluster initiative that are resident in the cluster location have been trained from Furniture, Pineapple processing and Tree growers and Super goat clusters initiatives.

Industrial Parks Project

The Industrial Parks project aims at building and developing business parks, where Small Medium Enterprises (SMEs) can be able to operate and function well. The Gatsby Trust Fund of the College of Engineering Design Art and Technology developed a similar Park in Mbarara and Jinja Districts. These parks will then be replicated in different parts of the country in order to give the SMEs a favorable working environment and hence boost their businesses.

The Makerere e-Content Project

The increase in students' intake in Makerere University in the era of dwindling resources has forced the University to explore creative ways in which it can balance the provision of content and academic excellence. Makerere University being a dual educational mode, therefore has had to find ways which help contribute towards the provision of both modes in the most effective manner and at the same time offer massive relief in ensuring that the University achieves its goals and mission. Content development therefore is one of key elements which shall enable Makerere University provide a meaningful balance in its mission and towards achieving it new strategic objective 2008/9 – 2018/19.

This project is aimed at addressing how Makerere University can develop, manage and integrate its e-content into the teaching and learning process with the assistance of the Learning Management Systems (LMS) and the electronic tools available on the LMS:
There are therefore three components which we require to enable us achieve this objective.

i) The first one is to ensure that we have an effective Learning Management System with tools which can enable the learn utilize content fully and achieve his/her expectation. This first objective is being adequately addressed by the recent adoption of the MUELE (Makerere University E-learning Environment based on the Moodle platform) which we hope shall receive acceptance by the Makerere University community and its versatile potential explored to achieve the stated goals.

ii) The second one is to identify, courses from selected faculties (Units) which shall be analyzed, designed, developed and moved onto the LMS to reach a bigger audience at a cheaper cost. The course must have certain specific attributes namely: the scope of the course being developed, the impact it is likely to have, the degree of reduction in the resources the University would have spent and the extent to which it cross cuts the disciplines in the University. In other words the cost benefit of each course must be clearly spelled out.

iii) The third component is the pedagogical consideration which needs to be addressed in integrating online content into the teaching and learning process.

The roll-out training being undertaken of the new LMS through assistance from Carnegie Corporation will address the first concern. The second and the third components above are to be addressed through this project.

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