

New Teaching Model in the Blended Learning Process for Tanzanian and International Prosthetists/Orthotists at the Kilimanjaro Christian Medical University College (KCMUCo), Moshi, Tanzania.



Introduction

The Kilimanjaro Christian Medical University College KCMUCo, Moshi, Tanzania Tumauni University Makumira, an institution of higher education in Tanzania, exerts all the resources in imparting the students with knowledge, skills and attitude required to render quality of services to patients suffering from different diseases, impairment and disabilities.

KCMUCo is offering Undergraduate and Postgraduate Programmes in its three Faculties – Faculty of Medicine – Faculty of Rehabilitation Medicine – Faculty of Nursing

The courses offered range from diploma to post-doctoral training in partly problem based learning (PBL) but mainly in-house traditional method.



A new project in the scope of "Establishing Partnerships in Training and Service Provision in Prosthetics and Orthotics Sector with the German Business Community" and the KCMUCo in Tanzania has been agreed in December 2016. One of the major aims is, to qualify professionals, and trainers of professionals to a higher level, to improve the quality of life and inclusion of persons with physical disability in Tanzania and other English speaking African Countries.

Project Partners

The KCMU-College in consultation with the Ministry of Health, Community Development, Gender, Elderly and Children and all other Stake Holders should ensure that, set-up standards are adhered too, in implementing educational, service provision, establishment of services and human resource development.

The Tanzanian Project Partners are:

Kilimanjaro Christian Medical University College, KCMUCo, Moshi, Tanzania



and

Tanzania Training Centre for Orthopaedic Technologists, TATCOT, Moshi, Tanzania



The German Project Partners are:

Saar - Lor – Lux Umweltzentrum Chamber of Crafts, Saarbruecken, Germany



HUMAN STUDY e.V. Nuernberg, Germany



and

**sequa gGmbH, Partner of German Business, under the
Federal Ministry for Economic Cooperation and Development**



The New Training Concept in a Blended Learning Format

The Faculty of Rehabilitation Medicine of KCMUCo is offering a Degree Course in Prosthetics & Orthotics **onsite** since 1997 for equivalent and direct entry students.

A new concept and teaching methodology developed by Human Study, a teaching institution specialized in the development and delivery of Blended Learning methodology in prosthetics and orthotics is offered from this year onwards for Tanzanian and other interested professionals of English speaking countries in Africa or other parts of the world.

The target group of this new study concept:

Professionals who are employed in the field of Orthopaedic Technology and are qualified on Diploma level in Orthopaedic Technology (Category II, WHO/ISPO) from an ISPO approved and recognized institution.

Provided the interested person has obtained distinction (i.e. B Grade or above) in Mathematics, Mechanics, Biomechanics, Pathology and Prosthetics and Orthotics – one is eligible to aim at a higher level of professional qualification, the **Bachelor of Science in Prosthetics and Orthotics**.



Graduation Ceremony KCMUCo

Course Structure of the Category I Programme in P&O according to ISPO standards.

HS - KCMUCo Blended Learning Education (BLE) is composed of:

- Online teaching (HS e-platform)
- Practical onsite teaching (workshops)
- Guided and supervised application of learned knowledge at work location
- Regular P&O production at work location

It is a six-semester program in which one semester lasts 22 to 24 weeks depending on the number of onsite practical workshop days and distributed as follows:

- 14 weeks for delivery of lectures
- 2-4 weeks for mid-term and semester exam preparation
- 2 - 4 weeks for mid-term and semester exams (Two weeks for mid-term and two weeks for semester exam)
- 1 - 3 weeks for practical workshop(s) depending on the semester

Prior to Week 1	Kick-off Conference
Week 1	Lecture I
Week 2	Lecture II
Week 3	Lecture III
Week 4	PRACTICAL WORKSHOP
Week 5	Lecture IV
Week 6	Lecture V
Week 7	Lecture VI
Week 8	Lecture VII
Week 9	Consultation Sessions
Week 10-11	MID-TERM EXAMS
Week 12	Lecture VIII
Week 13	Lecture IX
Week 14	Lecture X
Week 15	Lecture XI
Week 16	Lecture XII
Week 17	Lecture XIII
Week 18	Lecture XIV
Week 19	Break for Exam Preparation
Week 20	Consultation Sessions
Week 21-22	FINAL SEMESTER EXAMS

Online teaching content and resources

- Audio/video lectures

The curriculum consists of a number of general, medical and prosthetic/orthotic subjects, delivered online and onsite using customized blended learning methodology including contemporary multimedia tools:

- Interactive internet platform
- Study notes
- Educational movies
- Live lecturing
- Live consultations
- PPT presentations
- Forum discussion

Subjects (an overview)

	SEMESTER I	SEMESTER II	SEMESTER III	SEMESTER IV	SEMESTER V	SEMESTER VI
	THEORETICAL SUBJECTS	THEORETICAL SUBJECTS	THEORETICAL SUBJECTS	THEORETICAL SUBJECTS	THEORETICAL SUBJECTS	THEORETICAL SUBJECTS
1	Wheelchair and Custom Seating	Orthotics Science Theory	Prosthetics Science Theory	Orthotics Science Theory	Prosthetics Science Theory	Communication Skills
2	Information Technology	Information Technology	Applied Statistics	Research Methodology	Research Project	Research Project
3	Anatomy and Physiology	Anatomy and Physiology	Electro – Technology	Clinical Psychology	Clinical Workshop Management	Development Studies
4	Biomechanics (Applied Mechanics)	Biomechanics			Foundation of Faith	Engineering Design
5	Applied Mathematics	Pathology				
	PRACTICAL SUBJECTS	PRACTICAL SUBJECTS	PRACTICAL SUBJECTS	PRACTICAL SUBJECTS	PRACTICAL SUBJECTS	PRACTICAL SUBJECTS
1	External Clinical Practice	Orthotics Science Onsite Practice I	Prosthetics Science Onsite Practice II	Orthotics Science Onsite Practice III	Prosthetics Science Onsite Practice IV	
2	Clinical Practical Attachment I (logbook)	Clinical Practical Attachment II (logbook)	Clinical Practical Attachment III (logbook)	Clinical Practical Attachment IV (logbook)	Clinical Practical Attachment V (logbook)	Clinical Practical Attachment VI (logbook)
3			External Clinical Practice	External Clinical Practice	External Clinical Practice	External Clinical Practice

Practical workshops

Onsite practical workshops are organized in a centralized location with international experts.

During onsite workshops, students replicate with their patient what has been learned during the course and what has been demonstrated by the lecturer/trainer. They provide to the pre-assessed patients appropriate services/devices under the supervision of the workshop lecturer.

Onsite workshops:

- Wheelchair and Custom Seating
- Advanced Flaccid and Spastic Paresis
- H/K/A Disarticulations and Partial Foot
- Advanced Upper Limb Prosthetics
- Advanced Spinal Orthotics



Wheelchair and Custom Seating



Advanced Flaccid and Spastic Paresis



H/K/A Disarticulations and Partial Foot



Advanced Upper Limb Prosthetics



Advanced Spinal Orthotics

Student responsibility during the course

Students are expected to dedicate approximately 25 hours per week to their P&O studies.

They are strongly advised to follow lessons on the platform regularly, and fulfill all tasks (quizzes, assignments) provided by the teacher in a timely manner.

- Weekly quizzes:

Students can test and improve their knowledge by answering the weekly quizzes made available after each lesson.

- Assignments :

There is a weekly distribution of assignments for each subject (3-4 assignments per subject). There are different types of assignments: essay, research, quiz, task...etc.

Students are requested to do their assignments according to the provided deadlines.

- Student Logbook :

Students are all obliged to be employed and working in P&O workshops producing prosthetic/orthotic devices on daily basis.

The logbook is a database where students need to document their daily workshop activities with their patients. The logbook represents the clinical practice during the semester.

Students are required to enter 10 cases per semester.

- Case Presentations:

Case presentations have specific importance in blended learning methodology with the purpose of simulating multidisciplinary team approach and discussing evidence based practice.

Students are requested to create up to 4 comprehensive case presentations per semester which will be presented during online interactive sessions with the lecturer, potentially other mentors (P&O, medical doctor and physiotherapist) and other students of the program.

- Exams :

The student attends online and onsite examination and final P&O practical exam (ISPO Commission)

- Final Research Paper :

At the end of the program, students submit and present the Final Research Bachelor Degree Paper. The research paper is prepared under the supervision of HS-KCMUCo lecturers and written by the student over the course of 10 months.

More detailed information will be provided in the detailed curriculum for course participants, or on request or donors who sponsoring candidates for the programme.

General requirements for enrolment

- ISPO Category II Certificate
- Employment at P&O facility providing students regular access to workshop and patient services. It is recommended to have at least 2 years of work experience as an orthopedic professional post-Category II graduation.
- At least 2 professional references (1 employer, 1 instructor)
- English language proficiency (TOEFL 500 and above):
To be tested if students have not undergone previous education in English

Technical and administrative requirements

For online activities:

Access to a reliable internet connection

- Laptop with built in camera
- Headset (headphones and microphone)
- Additional Web camera (1.3 mp and above) with at least 2 meter USB cord
- Hard disk (500 Mb and over)
- Skype account

For offline activities:

- Valid passport needed for travel to centralized location for the practical part of studies and final ISPO Category I Examinations.



Enrolment procedure and costs

The first enrolment of participants is scheduled for **October 2017**. Students who are interested should apply to:

Course Coordinator at KCMUCo, Ms. H. Mranga
Email: hmranga@yahoo.com,

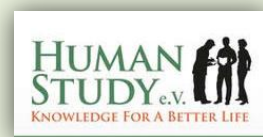
copy to the

Dean of Faculty of Rehabilitation Medicine, Mr. H.G. Shangali KCMUCo,
Email: hgshangali@kilinet.co.tz

Application should be made not later than **15th June 2017** including valid documents, ISPO recognized Diploma in Orthopaedic Technology, and Transcript of B Grades or above, in Mathematics, Mechanics, Biomechanics, Pathology and Prosthetics and Orthotics.

The advantage of the new teaching approach in the Blended Learning Format is for course participants the following:

- Interested candidates study parallel to the job and are productive for the benefit of the physical disabled clients, for a better life in the community.
- Students have a guaranteed income for themselves and family members during the studies.
- Students are not absent for a long period of time as it is necessary for the onsite courses.
- Students are kept abreast with the latest technology adapted to the environment and situation of their countries.
- The course fee is affordable and less than the onsite programmes.





2016 - 2018

**DIRECT UNIVERSITY COSTS FOR BSC
PROSTHETICS/ORTHOTICS
EQUIVALENT ENTRY - BLENDED LEARNING**

BACHELOR OF SCIENCE IN PROSTHETICS AND ORTHOTICS (USD) FOR INTERNATIONAL STUDENTS			
Item Description	Year1	Year 2	Year3
DIRECT COLLEGE COSTS			
Registration	60,00	0,00	0,00
ID card	10,00	0,00	0,00
*Medical capitation	110,00	110,00	110,00
Tuition	3.360,00	3.360,00	3.360,00
ICT facilitation	50,00	50,00	50,00
Technical orthopaedic components/materials	2280,00	2280,00	2280,00
Examination	150,00	150,00	150,00
Graduation	0,00	0,00	100,00
Students union	20,00	20,00	20,00
TCU QA	20,00	20,00	20,00
Caution money	30,00	0,00	0,00
TOTAL PAYABLE TO COLLEGE	6090,00	5990,00	6090,00
Costs for onsite workshops at TATCOT			
Description	Year1	Year 2	Year3
Pick up cost from airport, 50 per trip, four per year	200	200	200
Visa fee (Request resident permit for two years)	250		250
Yellow fever vaccination, before arrival			
Local transport hotel-TATCOT, 2 trips x USD 5 x 14 days x 2 per year	280	280	280
Hotel Accommodation, 14 days x USD 50 x 2 per year	1400	1400	1400
Subsistence allowance (food and others) 14 days x USD 20 x 2 per year	560	560	560
Onsite costs per year	2690	2440	2690
College and onsite costs per year	8780,00	8430,00	8780,00
NB: Return flight tickets and graduation costs are not included			

The Implementing Project Partners



Kilimanjaro Christian Medical University College



Human Study e.V.



Saar - Lor – Lux Umweltzentrum Chamber of Crafts

Moshi, 24th May 2017