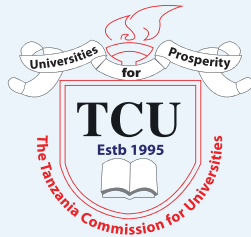


TANZANIA COMMISSION FOR UNIVERSITIES



PRACTICAL TRAINING FRAMEWORK

MARCH 2012

Tanzania Commission for Universities



PRACTICAL TRAINING FRAMEWORK

MARCH, 2012

LIST OF ACRONYMS AND ABBREVIATIONS

PTF	Practical Training Framework
TCU	Tanzania Commission for Universities
HEI	Higher Education Institution
PBL	Project Based Learning

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PREAMBLE

Higher Education Institutions (HEIs) in Tanzania have been implementing Practical Training in various programmes but with varying standards. This has complicated their administration, including financing of programmes. It is in this light that TCU has decided to develop Guidelines which will provide guidance to all institutions in the country.

The Practical Training Framework (PTF) is an instrument for the development and classification of practical training components according to a set of criteria for levels of learning and skills required in a particular programme. The PTF aims at integrating and harmonising practical training in the country.

Practical training provides an opportunity for students to develop their sensitivity to and appreciation of a wide range of different issues in different environments, both within and outside the classroom. Practical training can therefore help to develop a respect for the discipline and facilitate experiential learning. Practical training also provides an opportunity to link theory and practice.

Students can learn the importance of taking personal responsibility for their learning whilst the challenges provided by practical training can help to build students' confidence and resilience.

By applying different learning modes, practical training also enables students to become better all round learners.

Indeed, practical training is an important part of the higher-education curriculum. TCU recognizes several modes of practical training as explained later in this document. Generally, at

undergraduate level, practical training may be conducted **on-campus** in the form of seminars, projects, laboratory or studio work, fieldwork and simulations. Practical training may also be conducted **off-campus** in the form of fieldwork, excursions and attachments.

At the post graduation level, practical training takes work-oriented character or focus to enhance or perfect mastery of the competences needed by the graduate at the work place.

TCU expects all higher learning institutions to use this framework when preparing their practical training guidelines.

PART ONE

PRINCIPLES, OBJECTIVES AND FUNCTIONS OF THE PRACTICAL TRAINING FRAMEWORK

1.0 Title

This framework will be called the Practical Training Framework and shall be abbreviated as PTF.

1.1 Scope

The PTF shall apply to all higher education programmes. The PTF captures the following aspects:

- a) Definition of practical training and the applicable modes, each with an agreed set of clearly-defined descriptors so as to facilitate the selection of the appropriate mode for the practical training in a particular programme;
- b) Standardization of terminologies so as to promote understanding and effective implementation of the framework;
- c) Definition of common standards for every mode of practical training; and
- d) Definition of common quality assurance criteria and procedures for use in monitoring and regulating practical training.

1.2 Guiding Principles of PTF

The following principles shall guide the implementation of this PTF:

- a) The delivery of higher education must encourage and give priority for self study; this being the central tool for the development and realisation of student independence in the

learning process. This approach to learning encourages the development of job creators as opposed to job seekers.

- b) The learning process must encourage and facilitate teamwork; this being one of the tools for the development of the sense of community among students.
- c) The learning process must encourage the use of the existing positive life experiences, practical knowledge and skills as a base for training and development of the required knowledge, skills and competencies in the discipline.
- d) Practical training must be mainstreamed in the curriculum so as to facilitate the attainment of the expected learning outcomes.
- e) Practical training is a shared responsibility among many players in the process of learning – students, higher learning institutions, professional bodies, industries, employers, the communities, and other stakeholders.

1.3 The PTF Objectives

The main objective of PTF is to standardize and harmonize the country's practical training system in higher education by putting in place a system for setting and using practical training modes and defining expected knowledge, skills and competencies that may be acquired through practical training within the main and specific objectives of the curriculum.

Specific objectives are to:

- a) Create an integrated better organised framework for practical training through different modes;
- b) Provide a mechanism for determining the appropriate mode of practical training for different programmes; and
- c) Promote student centred learning.

1.4 Functions of the PTF

The PTF will serve the following functions:

- a) Facilitate institutional selection of the appropriate mode of practical training;
- b) Facilitate the system of management, planning, supervision and financing of practical training;
- c) Facilitate continuous improvement of Human Resource, infrastructure and facilities for Practical Training; and
- d) Enhance improvement in programme design and development.

PART TWO

PROGRAMME AND PTF DESCRIPTORS

2.1 Introduction

Descriptors are clear statements about the characteristics and outcomes of a particular programme or practical training mode. Descriptors are therefore broad, generic and cross-field statements of achievement at a particular level of programme or practical training mode and often not specific to any field of specialization. In principle, programme design and development impact on student learning, both at theory and practice levels, thus the necessity to have descriptors for the programmes as well as the different practical training modes.

2.2 Programme Descriptors

Table 1 is a summary of the descriptors at different programme levels of higher education. These descriptors are used in order to assist in the development and management of programmes, including the practical training components thereof.

2.3. Practical Training Modes Descriptors

The following modes of practical training have been found by education experts to be applicable to practical training in higher education. The descriptors for each of these modes are as summarised in Table 2.

2.3.1 Seminars/Tutorial

A seminar or otherwise known as tutorial in some disciplines is, ideally, a small-group teaching situation in which a subject is discussed, in depth, or a problem addressed and solved by the

participants. Ideally, the group does not exceed 15 participants in order to make it interactive.

Although they may differ in particulars, at most, seminars involve small classes and personal mentoring by a faculty member, mostly at the Tutorial Assistant level.

Seminars are offered during the semester to help students develop a sense of belonging to the discipline and to foster the intellectual skills and self-confidence necessary for academic success as well as skills and competencies in the discipline.

Seminars are not simply lecture courses with smaller number of students. Instead, each seminar encourages active learning, with each student an engaged, productive participant and enables the better understanding of the theories, concepts and principles learnt during the lecture sessions.

While the form of preparation varies from semester to semester, indeed from one seminar to the other, activities include discussion of ideas, research on special projects, fieldwork, library investigation, and other ways for students to be involved in their own education.

Seminar faculty members are supposed to be experts in their fields so as to effectively guide the seminar class toward full involvement on individual or group projects. In addition, seminars provide opportunities to develop techniques of independent inquiry that can be applied throughout a student's academic career.

Seminars, indeed, help students to develop creativity, self-expression, and independent thinking – abilities crucial to shaping

the future. Seminars can help promote active learning, personal growth, and individual achievement.

2.3.2 Simulations

Simulation is the imitation of some real thing, state of affairs, or process. The act of simulating something generally entails representing certain key characteristics or behaviors of a selected physical, abstract system or process.

Simulation is used in many contexts, such as simulation of technology for performance optimization, safety engineering, testing, training, education, and video games.

Simulation is also used for scientific modeling of natural systems or human systems in order to gain insight into their functioning. Simulation can be used to show the eventual real effects of alternative conditions, courses of action, practice or results.

Simulation is also used when the real system cannot be engaged, because it may not be accessible, or it may be dangerous or unacceptable to engage, or it is being designed but not yet built, or it may simply not exist.

Simulation is possible for any discipline. The practical effects of simulations include the following:

- a) weaving information into real-world problems in meaningful ways;
- b) promoting transfer of knowledge and application of skills;
- c) inculcating, not only skills, but also competencies
- d) enabling “deep” learning and improve motivation to learn a subject;
- e) addressing misconceptions by giving glimpses into what people in a given profession actually do; and otherwise

- f) helping to bridge the gap between the academics of a profession and the practice of that profession.

Finally, simulation generates discussion among participants and the facilitator which fosters the community of inquiry. Examples of simulation includes:- moot-courts for lawyers and micro-teaching for teachers.

2.3.3 Project based learning

Project Based Learning (PBL) is an approach for classroom activity that emphasizes learning activities that are long-term, interdisciplinary and student-centered. This approach is generally less structured than traditional, teacher-led classroom activities; in a project-based class, students often must organize their own work and manage their own time.

Within the project based learning framework students collaborate, working together to make sense of what is going on. Project-based instruction differs from inquiry-based activity by its emphasis on collaborative learning. Additionally, project-based instruction differs from traditional inquiry by its emphasis on students' own artifact construction to represent what is being learned.

Project-based learning involves students form their own investigation which allows students to develop valuable research skills. The students engage in design, problem solving, decision making, and investigative activities. It allows students to work in groups or by themselves and allows them to come up with ideas and solutions or presentations. Students take a problem and apply it to a real life situation with these projects.

Project-based learning provides complex tasks based on challenging questions or problems that involve the students'

problem solving, decision making, investigative skills, and reflection that include teacher facilitation, but not direction. Project Based Learning is focused on questions that drive students to encounter the central concepts and principles of a subject hands-on.

With Project-based learning students learn from these experiences and take them into account and apply them to their lives in the real world. PBL is a different teaching technique that promotes and practices new learning habits. The students have to think in original ways to come up with the solutions to these real world problems. It helps with their creative thinking skills by showing that there are many ways to solve a problem.

The core idea of project-based learning is that real-world problems capture students' interest and provoke serious thinking as the students acquire and apply new knowledge in a problem-solving context. The teacher plays the role of facilitator, working with students to frame worthwhile questions, structuring meaningful tasks, coaching both knowledge development and social skills, and carefully assessing what students have learned from the experience. Advocates assert that project-based learning helps prepare students for the thinking and collaboration skills required in the workplace.

2.3.4 Laboratory/Studios

A laboratory or studio is a room, building or facility often containing special equipment and materials for scientific experimentation or research where theories, techniques, and methods are tested, analyzed and demonstrated.

Laboratory work is a prominent feature of education in science and technology based subjects although it is also increasingly being

used in other disciplines such as linguistics, media studies, and fine and performing arts.

Laboratory or studio work is considered essential because it provides training in observation, supplies detailed information, and arouses students' interest and thereby enhances skills and remedy deficiencies in a particular subject.

Five groups of objectives that may be achieved through the use of the laboratory in science classes:

- a. skills - manipulative, inquiry, investigative, organizational, communicative
- b. concepts - for example, hypothesis, theoretical model, taxonomic category
- c. cognitive abilities - critical thinking, problem solving, application, analysis, synthesis
- d. understanding the nature of science - scientific enterprise, scientists and how they work, existence of a multiplicity of scientific methods, interrelationships between science and technology and among the various disciplines of science
- e. attitudes - for example, curiosity, interest, risk taking, objectivity, precision, confidence, perseverance, satisfaction, responsibility, consensus, collaboration, and liking science

In the laboratory or studio students can explore their understanding of the subjects being taught by placing their learning in context.

Laboratory and studio work can also help students develop expertise in critical enquiry, problem solving, experimental design, data analysis and presentation, and a long list of important academic and professional abilities.

2.3.5 Field Attachment

Field attachment is a field-based practical training experience that prepares trainees for the tasks they are expected to perform on completion of their training.

The purpose of field attachment is to enable students get hands-on/real life experience and provide an opportunity for students to apply the principles and techniques theoretically learnt into real-life problem solving situations.

2.3.6 Fieldwork

Fieldwork means a study which consists of practical activities that are done away from the classroom, school, college or place of work. In helping to bridge the divide between the classroom and the real world it helps to reinforce students' understanding of theories, terminologies and processes.

Fieldwork provides a means of contextualizing students' learning and contributing to students' cognitive development, enabling them to understand the relationships between different theories, factors processes etc in the discipline.

It promotes the development of a wide range of different skills, many of which are transferable. These can include enquiry skills such as observational skills, data collection, data analysis, map work and investigative skills. Students may have the opportunity to practise and apply technical skills.

Fieldwork can be both on-campus and off-campus depending on the programme plans and available resources. On-campus field work is applicable when the programme involves activities that can be done within the campus environment and normally within the academic session such as surveying, counseling etc. Off-campus

fieldwork is normally done outside the campus environment and can take place during the semester or at the end of academic year such as teaching practice, office management practices etc.

2.3.7 Excursions/Field trips

Excursion means a trip by a group of students to a particular place for educational purposes. It is done in recognition of the fact that the experiences of students outside the classroom environment through excursions or field trips contribute to the development of their understandings, skills and attitudes. The provision of opportunities for students to learn from the wider community builds on and reinforces the institution's curriculum. Excursions are an important means of providing such opportunities. Field trips allow students to learn more about the world and how to interact with others when they leave the sheltered environment of the classroom. Whatever the purpose, field trips are learning experiences.

2.3.8 Post Graduation Practical Training

Practical training after graduation is conducted in some disciplines and professions for a specified duration in order to enable the graduates gain professional experience and skills that would otherwise not be possible to inculcate during the time the candidates are at the higher learning institution.

Post graduation practical training places a significant responsibility to the graduate, profession and the industry before the graduate is certified to be competent for job placement or practice in the specified discipline. In some disciplines, post graduation practical training is a condition for professional registration and permit to practice.

With the continuous growth of the number of graduates in many disciplines, post graduation practical training is inevitable to ensure quality of the graduates before they assume full job responsibility.

TABLE 1: Programme Level Descriptors

Programme Level	Bachelor Degree	Masters Degree	Post Graduate Diploma and Certificates	Doctorate
Purpose	The Bachelor Degree qualification qualifies individuals to have advanced knowledge, skills, and competencies in a discipline, field of work or study, involving a critical understanding of theories and principles and some ability to work independently.	The Masters Degree qualification qualifies individuals to have highly specialized knowledge, skills, and competencies for research, problem solving and professional practice.	The Post graduate Diploma qualification qualifies individuals to have highly specialized knowledge, skills, and competencies for research, problem solving and professional practice.	The Doctorate Degree qualification qualifies individuals to have systematic and critical understanding of a complex field of learning and specialized research skills for the advancement of learning and professional practice.
Knowledge	Graduates of Bachelor Degree will have a broad knowledge base of the discipline, field of work or study, involving a critical understanding	Graduates of Masters Degree will have highly specialized knowledge, in a field of work or	Graduates of Post graduate Diploma will have highly specialized knowledge, in a field of work or	Graduates of Doctorate Degree will have knowledge at the most advanced frontier of a field of work or study and at the interface

Programme Level	Bachelor Degree	Masters Degree	Post Graduate Diploma and Certificates	Doctorate
	of theories and principles thereof.	study, as the basis for original thinking and/or research, and critical awareness of knowledge issues in a discipline and at the interface between fields in a discipline.	study, as the basis for original thinking and/or research, and critical awareness of knowledge issues in a discipline and at the interface between fields in a discipline.	between fields, generation of knowledge through personal research or equivalent contribution to the development of the subject/discipline
Skills	Graduates of Bachelor Degree will have a wide range of specialized technical or scholastic skills to practice routine principles of enquiry and/or research, effectively communicate information, ideas,	Graduates of Masters Degree will have specialized problem-solving skills required in research and/or innovation in order to develop new knowledge and	Graduates of Post graduate Diploma will have specialized problem-solving skills required in research and/or innovation in order to develop new	Graduates of Doctorate Degree will have highly specialised skills to: <ul style="list-style-type: none"> • communicate at the standard of published academic work and/or critical dialogue and review with peer and

Programme Level	Bachelor Degree	Masters Degree	Post Graduate Diploma and Certificates	Doctorate
	<p>problems and solutions to both specialists and non-specialist audiences.</p>	<p>procedures and to integrate knowledge from different fields, have independent learning ability required for continuing professional development, use a range of established technique to initiate and undertake critical analysis of information and propose solutions to problems arising from that analysis.</p>	<p>knowledge and procedures and to integrate knowledge from different fields, have independent learning ability required for continuing professional development, use a range of established technique to initiate and undertake critical analysis of information and propose solutions to problems arising from that analysis.</p>	<p>experts in other specializations;</p> <ul style="list-style-type: none"> • Employ the most advanced and specialized skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice.

Programme Level	Bachelor Degree	Masters Degree	Post Graduate Diploma and Certificates	Doctorate
Competencies	Graduates at this level will demonstrate ability to work alone or with others in self directed and sometimes directive activity within broad general guidelines or functions, and work with some autonomy.	Graduates at this level will demonstrate ability to manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches, take responsibility for contributing to professional knowledge and practice and/or review the strategic performance.	Graduates at this level will demonstrate ability to manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches, take responsibility for contributing to professional knowledge and practice and/or review the strategic performance.	Graduates at this level will demonstrate : <ul style="list-style-type: none"> • Substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study context including research • Ability to deal with complex ethical and professional issues and make informed judgments on issues

Programme Level	Bachelor Degree	Masters Degree	Post Graduate Diploma and Certificates	Doctorate
				not addressed by current professional and/or ethical codes and practice <ul style="list-style-type: none"> • Originality or creativity in the application of knowledge, understanding and practice
Volume of learning	The volume of learning of Bachelor Degree is a minimum of 3 years.	The volume of learning of Masters Degree is a minimum of 1 year	The volume of learning of Post Graduate Diploma is a minimum of 1 year	The volume of learning of Doctorate Degree is a minimum of 3 years

TABLE 2: Descriptors for Different Practical Training Modes

<i>PRACTICAL TRAINING MODE</i>	<i>KNOWLEDGE</i>	<i>SKILLS</i>	<i>COMPETENCY</i>	<i>TIMING</i>
ON CAMPUS				
Seminars	Helps the student to enhance or acquire appropriate knowledge of the theories and principles in the discipline as well as use the opportunity to test what he/she knows so as to be able to deal with the portion he/she does not know yet.	Helps the student to foster the intellectual skills and self-confidence necessary for academic success as well as skills for independent and teamwork research, communication and presentation. Helps the student also develop creativity, self-expression, and independent thinking – abilities crucial to shaping the future.	Helps the student develop a sense of belonging to the discipline. Critical, inquiring mind essential for dealing with changes, mastery of the research tools and processes and other competencies in the discipline	Every Semester according to a timetable
Simulations	Helps the student to enhance better understanding of the theories and principles in the discipline or modules the subject of	Enable the student apply the skills learned as well as engage the processes and organizational aspects involved in the areas	Mastery of the practice in the discipline or modules being simulated	Every Semester according to a timetable and programme requirements

<i>PRACTICAL TRAINING MODE</i>	<i>KNOWLEDGE</i>	<i>SKILLS</i>	<i>COMPETENCY</i>	<i>TIMING</i>
	the simulations. Encourages “deep” learning.	being simulated, and the interactions with other disciplines, people and organizations.		
Projects and Researches	Enables the students to focus on questions that drive them to encounter the central theories, concepts and principles in the discipline or modules involved.	Enhances ability to carry out independent or group work investigation thereby develop valuable research skills. This entail ability to design, problem solving, decision making, engaging in investigative activities and presenting the results thereof. Enables the students to think in original ways to come up with the solutions to real world problems. It helps with students creative thinking skills	Ability to deal with complex tasks based on challenging questions or problems that involve the students' problem solving, decision making, investigative skills, and reflection that include teacher facilitation, but not direction. Ability to work in groups or individually and come up with ideas and solutions or presentations on a particular issue.	According to a time table and programme requirements

<i>PRACTICAL TRAINING MODE</i>	<i>KNOWLEDGE</i>	<i>SKILLS</i>	<i>COMPETENCY</i>	<i>TIMING</i>
		by showing that there are many ways to solve a problem.		
Laboratory/Studio	<p>Achieve the following knowledge objectives:</p> <p>f. concepts - for example, hypothesis, theoretical model, taxonomic category</p> <p>g. Understanding the nature of science - scientific enterprise, scientists and how they work, existence of a multiplicity of scientific methods, interrelationships between science and technology and among the</p>	<p>Helps students to explore their understanding of the subjects being taught by placing their learning in context.</p> <p>Achieve the following skills objective:</p> <p>a. skills - manipulative, inquiry, investigative, organizational, communicative</p> <p>b. Cognitive abilities - critical thinking, problem solving, application, analysis, synthesis.</p>	<p>Enable the students to develop the mastery of the discipline and attitudes necessary for practice in the discipline - for example, curiosity, interest, risk taking, objectivity, precision, confidence, perseverance, satisfaction, responsibility, consensus, collaboration, and liking science as well as expertise in critical enquiry, problem solving, experimental design, data analysis</p>	<p>Every Semester according to a timetable and programme requirements</p>

<i>PRACTICAL TRAINING MODE</i>	<i>KNOWLEDGE</i>	<i>SKILLS</i>	<i>COMPETENCY</i>	<i>TIMING</i>
	various disciplines of science.		and presentation	
Fieldwork	In bridging the divide between the classroom and the real world it helps to reinforce students' understanding of theories, terminologies and processes. It is one of the means of contextualising students' learning and contributing to students' cognitive development, enabling them to understand the relationships between different theories, factors processes etc in the discipline.	Promotes the development of a wide range of different skills, many of which are transferable - including enquiry skills such as observational skills, data collection, data analysis, map work and investigative skills.	Ability to practice and apply technical skills in the discipline or modules involved. Develop sense of community work.	According to a time table and programme requirements
OFF - CAMPUS				
Fieldwork	In bridging the divide between the classroom	Promotes the development of a wide	Deepened ability to practice and apply	End of the Academic Year

<i>PRACTICAL TRAINING MODE</i>	<i>KNOWLEDGE</i>	<i>SKILLS</i>	<i>COMPETENCY</i>	<i>TIMING</i>
	and the real world it helps to deepen students' understanding of theories, terminologies and processes, enabling them to more concretely understand the relationships between different theories, factors processes etc in the discipline.	range of different skills, many of which are transferable - including enquiry skills such as observational skills, data collection, data analysis, map work and investigative skills.	technical skills in the discipline or modules involved. Deepened sense of community work. Ability to link classroom learning with real life environment.	except the final year depending on the programme requirements
Field Attachments	In bridging the divide between the classroom and the real world it helps to deepen students' understanding of theories, terminologies and processes, enabling them to more concretely understand the relationships	Provides an opportunity for students to apply the principles and techniques theoretically learnt into real-life problem solving situations by understudying the person (apprenticeship) or	Deepened ability to practice and apply technical skills in the discipline or modules involved. Deepened sense of community work. Ability to link classroom learning with real life environment.	End of the Academic Year except the final year depending on the programme requirements

<i>PRACTICAL TRAINING MODE</i>	<i>KNOWLEDGE</i>	<i>SKILLS</i>	<i>COMPETENCY</i>	<i>TIMING</i>
	between different theories, factors processes etc in the discipline.	systems in the world of work.		
Excursions	Enhances students' knowledge through interaction with the wider community, environment and systems.	Enhances observation skills, inquiry skills, tolerance, acceptance, interaction, networking, and patriotism	Ability to interact with other people and network beyond the classroom. Ability to link classroom learning with real life environment.	Regularly within a semester depending on the programme requirements

PART THREE

PROGRAMMES AND CORRESPONDING PRACTICAL TRAINING MODES

3.1 Introduction

Higher learning institutions must take cognisance of the fact that programmes have to be designed and developed with the practical training components in mind. Each programme must show clearly how the theoretical part is complemented by the practical training part taking into account the various modes that have been highlighted in this PTF. It should be noted that practical training can take place both within and outside the campus thus the two categories namely on campus practical training and off-campus practical training. Each of these categories has corresponding modes that can be implemented during the semesters or vacations.

3.2 Choosing and Applying the Practical Training Modes in Programmes

Practical training modes may differ from programme to programme depending on the nature of the discipline being pursued. However, certain modes apply to all programmes. These include seminars or tutorials, projects and, to a large extent, simulations. In designing and developing programmes, every higher learning institution must show how these cross-cutting modes are going to be realised and assessed during the delivery of the programmes.

Similarly, some programmes may require a practical training mode that is not available to other programmes. These programmes include engineering and technology programmes, agriculture and life sciences programmes and land sciences programmes, which

require, in addition to cross-cutting modes, the laboratory or studio aspects of practical training,

Some programmes require some exposure to real work situation before the student graduates. The exposure could be in the form of off-campus fieldwork or attachment. These programmes are indicated in Table 3. For other programmes, this type of exposure is optional and thus each institution is required to design their programmes to accommodate such experiences through on campus modes, especially in on campus fieldwork and seminars or simulations where guest speakers or role models, for example, may be used.

For specific programme areas or clusters practical training modes are as presented in Table 3.

TABLE 3: PROGRAMES AND CORRESPONDING PRACTICAL TRAINING MODES

SN	Cluster	SN	Programme Name	On Campus					Off Campus				Post Graduation Comprehensive Practical Training (World of Work) - Internship		
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments				
1	Agriculture and Life Sciences	1.	B.Sc. Agricultural Economics	√	√	√	√	√		√					
		2.	B.Sc. Agriculture Ed. Extension	√	√	√	√	√		√					
		3.	B.Sc. Agriculture	√	√	√	√	√		√				√	
		4.	B.Sc. Agronomy	√	√	√	√	√		√					
		5.	B.Sc. Horticulture	√	√	√	√	√		√	√				
		6.	B.Sc. Fisheries & Aquaculture	√	√	√	√	√		√					
		7.	B.Sc. Animal Science	√	√	√	√	√		√				√	
		8.	B.Sc. Wildlife	√	√	√	√	√		√	√				
		9.	B.Sc. Forestry	√	√	√	√	√		√	√			√	
		10.	B.Sc. Aquatic Sciences	√	√	√	√	√		√	√				
		11.	B.Sc. Aquatic Environmental Sciences and Conservation	√	√	√	√	√		√	√				
		12.	Bachelor of Veterinary Medicine	√	√	√	√	√		√				√	

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments	
		13.	B.Sc. Eco-Tourism and Nature Conservation	√	√		√		√	√		
2	Education	1.	Bachelor of Education	√	√		√		√			√
		2.	B.A. Education	√	√		√		√			√
		3.	Bachelor of Ed. Arts	√	√		√		√			√
		4.	Bachelor of Adult Education	√	√		√		√			√
		5.	Bachelor of Early Childhood Education	√	√		√		√			√
		6.	Bachelor of Guidance and Counselling	√	√		√		√			√
		7.	B.Ed. (Special Education)	√	√	√	√		√	√		√
		8.	B.Ed. (Physical Ed. & Sports)	√	√	√	√	√	√	√		√
		9.	Bachelor of Adult Education and Community Development	√	√		√		√			√
		10.	B.Ed. Management and Administration	√	√		√		√			√
		11.	Bachelor Degree in Adult and Continuing Education	√	√		√		√			√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		12.	B.Ed. Policy, Planning and Administration	√	√		√			√			√
		13.	Bachelor of Business Administration (Education)	√	√		√			√			√
		14.	Bachelor of Commerce (Education)	√	√		√			√			√
		15.	B.Sc. Education	√	√	√	√			√			√
		16.	Bachelor of Philosophy with Education	√	√	√	√			√			√
		17.	B.Ed. Science	√	√	√	√			√			√
		18.	B.Ed. (Mathematics)	√	√	√	√			√			√
		19.	B.Ed.in Economics	√	√	√	√			√			√
		20.	B.Ed.in English	√	√	√	√			√			√
		21.	B.Ed.in Geography	√	√	√	√			√			√
		22.	B.Ed.in Guidance and Counseling	√	√	√	√			√			√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments	
		23.	B.Ed.in Information Communication Technology	√	√	√	√		√			√
		24.	B.Ed.in Religious Education	√	√	√	√		√			√
		25.	B.Ed. Counseling and Psychology	√	√	√	√		√			√
		26.	B.Ed. in Accounting	√	√	√	√		√			√
		27.	B.Ed. in Commerce and (BECA)	√	√	√	√		√			√
		28.	B.Sc. Education (Chemistry and Biology)	√	√	√	√		√			√
		29.	B.Sc. Education (Geography and Biology)	√	√	√	√		√			√
		30.	B.Sc. Education (Geography and Mathematics)	√	√	√	√		√			√
		31.	B.Sc. Education (Informatics and Mathematics)	√	√	√	√		√			√
		32.	B.Sc. Education, Chemistry and Mathematics	√	√	√	√		√			√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments	
		33.	B.Ed. Special Needs Science Subjects	√	√	√	√		√	√		√
		34.	B.Ed. Special Needs Arts Subject	√	√	√	√		√	√		√
		35.	B.Sc. Agricultural Education	√	√	√	√		√	√		√
		36.	B.A. Religious Studies with Education	√	√	√	√		√			√
		37.	B.A. Holistic Child Development (BA.HCD)	√	√	√	√		√			√
		38.	B.Ed. (Languages)	√	√	√	√		√	√		√
3	Humanities and Arts	1.	B.A. Culture & Heritage	√	√					√		
		2.	B.A. Fine & Performing Arts	√	√		√	√		√		
		3.	B.A. Theatre Arts	√	√	√	√	√		√		
		4.	B.A. Music	√	√	√	√	√		√		
		5.	Bachelor of Psychology	√	√				√			
		6.	B.A. Fine Art	√	√	√		√				

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments	
		7.	B.A. Archaeology	√	√	√	√		√	√		
		8.	B.A. History & Political Science	√	√					√		
		9.	B.A. History & Archaeology	√	√	√	√		√	√		
		10.	B.A. History	√	√					√		
		11.	B.A. Kiswahili Literature	√	√			√				
		12.	B.A. Kiswahili Linguistics	√	√	√		√				
		13.	B.A. Kiswahili	√	√		√	√				
		14.	B.A. English	√	√		√	√				
		15.	B.A. Literature	√	√			√				
		16.	B.A. Language Studies	√	√	√	√	√				
		17.	B.A. Translation and Interpretation	√	√	√		√		√		
		18.	B.A. Writing and Printing	√	√	√		√				
		19.	B.A. French	√	√	√	√	√				
		20.	B.A. Oriental Studies	√	√	√	√	√				

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		21.	B.A. Arabic	√	√	√	√	√					
		22.	B.A. Chinese	√	√	√	√	√					
		23.	B.A. Korean	√	√	√	√	√					
		24.	B.A. International Relations and Diplomacy	√	√								
		25.	B.A. Community Economic Development	√	√					√			
		26.	B.A. Public Administration and Human Resource Management	√	√								
		27.	B.A. Business Economics	√	√		√	√					
		28.	B.A. Community and Economic Development	√	√					√			
		29.	B.A. Human Resources Management	√	√								
		30.	B.A. African Studies	√	√								
		31.	B.A. Community Based Development	√	√					√			
		32.	B.A. Development Studies	√	√								

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		33.	B.A. Environmental Disaster Management	√	√		√			√	√		
		34.	B.A. Environmental Economics and Policy	√	√						√		
		35.	B.A. Film and Theatre	√	√	√					√		
		36.	B.A. Heritage Management	√	√	√					√		
		37.	B.A. International Relations	√	√								
		38.	B.A. Library and Information Services	√	√	√		√					
		39.	B.A. Literature and Language	√	√	√	√	√					
		40.	B.A. Oriental Languages Japanese (BA - Japanese)	√	√	√	√	√					
		41.	B.A. Philosophy	√	√								
		42.	Bachelor of Philosophy with Political Science	√	√								
		43.	B.A. Political Science and Philosophy	√	√								
		44.	B.A. Project Planning, Management	√	√						√		

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
			and Community Development.										
		45.	B.A. Psychology	√	√								
		46.	B.A. Public Administration	√	√								
		47.	B.A. Public Administration and Management	√	√								
		48.	B.A. Public Relations and Advertising	√	√	√	√						
		49.	B.A. Public Relations and Marketing	√	√	√	√						
		50.	B.A. Religious Studies	√	√			√					
		51.	B.A. Sociology and Philosophy	√	√								
		52.	B.A. Sociology and Social Work	√	√		√	√		√			
		53.	B.A. Statistics	√	√	√							
		54.	B.A. Tourism and Cultural Heritage	√	√	√	√						
		55.	B.A. Marketing and Entrepreneurship	√	√								
		56.	B.A. Music	√	√	√	√						

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		57.	B.A. Procurement and Supply Management	√	√						√		
		58.	B.A. Social Work	√	√		√	√			√		
		59.	Bachelor of Social Work and Social Administration	√	√		√	√			√		
		60.	Bachelor of Sociology	√	√								
		61.	Bachelor of Theology	√	√							√	
		62.	Bachelor of Theology with Education	√	√					√		√	
		63.	Bachelor Public Administration	√	√								
		64.	Bachelors Degree in Economics of Development	√	√								
		65.	Bachelors Degree in Politics and Management of Social Development	√	√								
		66.	B.A. Theology	√	√							√	
		67.	Bachelor of Divinity	√	√								

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		68.	Bachelor of Islamic Studies	√	√							√	
		69.	Bachelor of Arabic & Islamic studies	√	√							√	
		70.	B.A. Counselling	√	√			√					
4	Social Sciences, Business and Law	1.	Bachelor of Laws (LLB)	√	√		√						√
		2.	Bachelor of Law & Shariah	√	√		√						√
		3.	B.A. Law Enforcement	√	√		√			√			√
		4.	B.A. Social Science	√	√								
		5.	B.A. Office Administration	√	√							√	
		6.	Bachelor in Library & Information. services	√	√			√					
		7.	Bachelor of Humanity	√	√								
		8.	B.A.	√	√								
		9.	B.Sc. Rural Development	√	√		√			√			
		10.	B.A. Statistics	√	√	√	√	√		√			

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		11.	B.A. Sociology	√	√								
		12.	B.A. Political Sc. & Sociology	√	√								
		13.	B.A. Political Sc.& language	√	√								
		14.	B.A. Political Sc.& Public Admin	√	√								
		15.	Bachelor of Cultural Anthropology & Tourism	√	√					√			
		16.	B.A. Anthropology	√	√					√			
		17.	B.A. Geography & Environmental Studies	√	√	√	√	√		√	√		
		18.	B.A. Archaeology & Geography	√	√	√	√	√		√	√		
		19.	B.A. Geography & Statistics	√	√	√	√	√		√	√		
		20.	B.A. Economics & Sociology	√	√		√	√					√
		21.	B.A. Economics & Commerce	√	√		√	√					√
		22.	B.A. Economics	√	√		√	√					√

SN	Cluster	SN	Programme Name	On Campus					Off Campus				Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments			
		23.	B.A. Political Sc.& & Economics	√	√		√	√						√
		24.	B.A. Economics & Statistics	√	√		√	√	√					√
		25.	B.A. Economics & Geography	√	√	√	√	√	√	√				√
		26.	B.Sc. Economics, Policy & Planning	√	√		√	√						√
		27.	B.A. Records & Archives	√	√	√		√						
		28.	B.Sc. Agricultural Economics and Agribusiness	√	√		√	√						
		29.	B.A. Microfinance and Entrepreneurship Development	√	√		√	√						
		30.	B.A. Journalism	√	√	√	√	√	√			√		√
		31.	B.A. Mass Communication	√	√	√	√	√	√			√		√
		32.	B.A. Mass Communication and Advertising	√	√	√	√	√	√			√		√
		33.	B.A. Public Relations	√	√		√	√						
		34.	B.Sc. Population & Development	√	√		√		√					

SN	Cluster	SN	Programme Name	On Campus					Off Campus				Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments			
		35.	B.Sc. Production & Operations Mgt	√	√		√			√				
		36.	B.Sc. Project Planning & Mgt	√	√		√	√						√
		37.	Bachelor of Business Administration	√	√		√	√						√
		38.	Bachelor of Commerce	√	√		√	√						√
		39.	B.A. Coop. Mgt & Accounting	√	√		√	√						√
		40.	B.A. Accounting & Finance	√	√		√	√						√
		41.	Bachelor of Accountancy	√	√		√	√						√
		42.	B.Sc. Tourism	√	√		√	√						√
		43.	Bachelor of Public Administration (Health Service Mgt)	√	√		√	√						√
		44.	Bachelor of Public Administration (Human Resource Mgt)	√	√		√	√						√
		45.	Bachelor of Public Administration (Local Government Mgt)	√	√		√	√						√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		46.	Bachelor of Public Administration (Central Government)	√	√		√	√					√
		47.	Bachelor of Public Administration (Public Service Mgt)	√	√		√	√					√
		48.	B.Sc. in Hospitality and Tourism Management	√	√		√	√					√
		49.	B.Sc. Regional Development Planning	√	√	√	√	√		√	√	√	√
		50.	B.Sc. Real Estate (Finance and Investment)	√	√	√	√	√		√	√	√	√
		51.	Bachelor Degree in Environmental Planning and Management	√	√	√	√	√		√	√	√	√
		52.	B.Sc. Urban and Regional Planning	√	√	√	√	√		√	√	√	√
		53.	Bachelor Degree in Marketing	√	√		√	√					
		54.	Bachelor in Legal and Industrial Metrology	√	√	√	√	√				√	
		55.	Bachelors Degree in Community Development	√	√		√	√		√			

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		56.	Bachelors Degree in Gender and Development	√	√								
		57.	Bachelor Degree in Financial Administration (Accounting)	√	√		√	√					√
		58.	Bachelor Degree in Financial Administration (Finance and Banking)	√	√		√	√					√
		59.	B.Sc. Accounting and Finance	√	√		√	√					√
		60.	Bachelor Human Resources Management (BHRM)	√	√		√	√					
		61.	Bachelor in Divinity	√	√						√		
		62.	Bachelor of Accounting and Finance (BAF)	√	√		√	√					√
		63.	Bachelor of Accounting in Business Accounting and Finance (BACC/BAF)	√	√		√	√					√
		64.	Bachelor of Accounting in Local Government Accounting and Finance	√	√		√	√					√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		65.	Bachelor of Accounting in Public Sector Accounting Finance and Investigation	√	√		√	√					√
		66.	Bachelor of Applied Theology	√	√						√		
		67.	Bachelor of Business Administration (Accounting and Finance)	√	√		√	√					√
		68.	Bachelor of Business Administration and Management	√	√		√	√					
		69.	Bachelor of Business Administration Entrepreneurship and Development (BBA.ED)	√	√		√	√					
		70.	Bachelor of Business Administration in Procurement and Logistic Management	√	√		√	√					
		71.	Bachelor of Business Computing	√	√	√	√	√					
		72.	Bachelor of Business Studies	√	√		√	√					√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		73.	Bachelor of Commerce in Accounting	√	√		√	√					√
		74.	Bachelor of Commerce in Banking and Financial Services	√	√		√	√					√
		75.	B.Sc. Tourism Management	√	√		√	√					√
		76.	Bachelor of Commerce in Finance	√	√		√	√					√
		77.	Bachelor of Commerce in Human Resource Management	√	√		√	√					√
		78.	Bachelor of Commerce in Information Management	√	√		√	√					√
		79.	Bachelor of Commerce in International Business	√	√		√	√					√
		80.	B.Sc. Insurance and Risk Management	√	√		√	√					√
		81.	B.Sc. Tax Management	√	√		√	√					√
		82.	B.Sc. Social Protection	√	√		√	√					√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		83.	B. Sc. Family and Consumer Studies	√	√		√	√					√
		84.	B.Sc. in Procurement and Supply Chain Management	√	√		√	√			√		√
		85.	B.Sc. Economic Population and Development (B.Sc. P&D)	√	√		√	√					√
		86.	Bachelor of Commerce in Management Science (Information System Management)	√	√		√	√					√
		87.	Bachelor of Commerce in Marketing	√	√		√	√					√
		88.	Bachelor of Commerce in Procurement Management	√	√		√	√			√		√
		89.	B.Sc. Economics & Finance	√	√		√	√					√
		90.	B.Sc. Economics and Project Planning	√	√		√	√					√
		91.	Bachelor of Commerce in Small Business Entrepreneurship	√	√		√	√					√
		92.	Bachelor of Commerce in Tourism and Hospitality Management	√	√		√	√					√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		93.	Bachelor of Computer and Science Engineering	√	√		√	√					√
		94.	Bachelor of Conflict resolution and Peace Building	√	√		√	√					√
		95.	Bachelor of Development Studies	√	√		√	√					√
		96.	Bachelor Degree in Development Finance And Investment Planning	√	√		√	√		√	√	√	√
		97.	Bachelor of Human Resource and Public Relations	√	√		√	√					√
		98.	Bachelor of Human Resource Management	√	√		√	√					√
		99.	Bachelor of Information Management	√	√		√	√					√
		100.	Bachelor of Information System and Network Engineering	√	√		√	√					√
		101.	Bachelor of International Business Administration	√	√		√	√					√
		102.	Bachelor of Local Government Management (BLGM)	√	√		√	√					√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		103.	Bachelor of Management Information Systems	√	√		√	√					√
		104.	Bachelor of Marketing Management	√	√		√	√					√
		105.	Bachelor of Procurement And Logistics Management	√	√		√	√					√
		106.	Bachelor Degree in Procurement and Supplies Management	√	√		√	√					√
		107.	Bachelor of Business Management	√	√		√	√					√
		108.	Bachelor of Banking and Finance	√	√		√	√					√
		109.	Bachelor Degree in Logistics and Transport Management	√	√		√	√					√
		110.	Bachelor of Economics and Finance	√	√		√	√					√
		111.	Bachelor Degree in Population And Development Planning	√	√		√	√	√	√	√		√
		112.	Bachelor Degree in Regional Development Planning	√	√		√	√	√	√	√		√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		113.	Bachelor Degree in Industrial Relations	√	√		√	√					
		114.	Bachelor of Public Administration in Records Management BPA (RM)	√	√		√	√					
		115.	Bachelor of Rural Development	√	√		√	√					
		116.	B.A. Tourism	√	√		√	√		√			√
		117.	B.A. Office Management and Administration	√	√						√		√
5	Engineering, Manufacturing and Construction	1.	B.Sc. Energy Engineering	√	√	√	√	√			√		√
		2.	B.Sc. Civil Engineering	√	√	√	√	√			√		√
		3.	B.Sc. Telecom. Engineering	√	√	√	√	√			√		√
		4.	B.Sc. Mining Engineering	√	√	√	√	√			√		√
		5.	B.Sc. Mechanical and Industrial Engineering	√	√	√	√	√			√		√
		6.	Bachelor degree in Automobile Engineering	√	√	√	√	√			√		√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments	
		7.	B.Sc. Electro-Mechanical Eng	√	√	√	√	√			√	√
		8.	B.Sc. Electro Power Eng.	√	√	√	√	√			√	√
		9.	B.Sc. Electrical Engineering	√	√	√	√	√			√	√
		10.	B.Sc. Engineering	√	√	√	√	√			√	√
		11.	B.Sc. Engineering Geology	√	√	√	√	√			√	√
		12.	B.Sc. Computer Engineering & Information Technology	√	√	√	√	√			√	√
		13.	B.Sc. Agricultural Engineering	√	√	√	√	√			√	√
		14.	B.Sc. Environmental Sciences	√	√	√			√			√
		15.	B.Sc. Petroleum Reservoir Engineering	√	√	√	√	√			√	√
		16.	B.Sc. Petroleum Production Engineering	√	√	√	√	√			√	√
		17.	B.Sc. Chem.& Process Eng	√	√	√	√	√			√	√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments	
		18.	B.Sc. Mineral Processing Eng	√	√	√	√	√			√	√
		19.	B.Sc. Food and Biochemical Engineering	√	√	√	√	√			√	√
		20.	B.Sc. Environmental Engineering	√	√	√	√	√	√	√	√	√
		21.	B.Sc. Water Resources Engineering	√	√	√	√	√			√	√
		22.	B.Sc. Software Engineering	√	√	√	√	√			√	√
		23.	B.Sc. Land Management & Valuation	√	√	√	√	√	√	√	√	√
		24.	B.Sc. Urban & Rural Planning	√	√	√	√	√	√	√	√	√
		25.	B.Sc. Building Economics	√	√	√	√	√	√	√	√	√
		26.	B.Sc. Building Surveying	√	√	√	√	√	√	√	√	√
		27.	B.Sc. Architecture	√	√	√	√	√	√	√	√	√
		28.	Bachelor of Technology in Architecture	√	√	√	√	√	√	√	√	√

SN	Cluster	SN	Programme Name	On Campus					Off Campus				Post Graduation Comprehensive Practical Training (World of Work) - Internship
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		29.	Bachelor of Architecture in Interior Design	√	√	√	√	√	√	√	√	√	√
		30.	Bachelor of Architecture in Landscape Architecture	√	√	√	√	√	√	√	√	√	√
		31.	B.Sc. Irrigation & Water Resource Engineering	√	√	√	√	√	√	√	√	√	√
		32.	B.Sc. Construction Management	√	√	√	√	√	√	√	√	√	√
		33.	B.Sc. Housing and Infrastructure Planning	√	√	√	√	√	√	√	√	√	√
		34.	B.Sc. Municipal and Industrial Services Engineering	√	√	√	√	√	√	√	√	√	√
		35.	B.Sc. Property and Facilities Management	√	√	√	√	√	√	√	√	√	√
		36.	Bachelor of Engineering in Electrical Engineering.	√	√	√	√	√			√		√
		37.	Bachelor of Engineering in Electronics And Telecommunication Engineering.	√	√	√	√	√			√		√
		38.	BSc in Telecommunication Engineering	√	√	√	√	√			√		√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments	
		39.	BSc. In Computer Engineering and IT	√	√	√	√	√			√	√
		40.	Bachelor of Engineering in Mechanical Engineering.	√	√	√	√	√			√	√
		41.	Bachelor of Engineering in Civil Engineering.	√	√	√	√	√			√	√
		42.	Bachelor of Mechanical Engineering	√	√	√	√	√			√	√
		43.	Bachelor of Engineering in Computer Engineering.	√	√	√	√	√			√	√
		44.	Bachelor of Electrical and Electronics Engineering	√	√	√	√	√			√	√
		45.	Bachelor of Electronics and Communication Engineering	√	√	√	√	√			√	√
		46.	Bachelor of Engineering	√	√	√	√	√			√	√
		47.	B.Sc. Civil and Structural Engineering	√	√	√	√	√			√	√
		48.	B.Sc. Mineral Processing Engineering	√	√	√	√	√			√	√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments	
		49.	B.Sc. Civil and Transportation Engineering	√	√	√	√	√			√	√
		50.	B.Sc. Civil and Water Resources Engineering	√	√	√	√	√			√	√
		51.	B.Sc. Computer Engineering	√	√	√	√	√			√	√
		52.	B.Sc. Computer Science and Information Systems Security	√	√	√	√	√			√	√
		53.	B.Sc. Industrial Engineering and Management	√	√	√	√	√			√	√
		54.	Bachelor of Civil Engineering	√	√	√	√	√			√	√
		55.	B.Sc. Bio-processing & Post-Harvest Engineering	√	√	√	√	√			√	√
		56.	B.Sc. Food Science & Technology	√	√	√	√	√	√			√
6	Health and Welfare	1.	B.Sc. Nursing	√	√	√	√	√	√			√
		2.	B.Sc. Nursing Mgt	√	√	√	√	√	√			√
		3.	B.Sc. Nursing Education	√	√	√	√	√	√			√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		4.	B.Sc. Veterinary Medicine	√	√	√	√	√	√				√
		5.	Doctor of Medicine	√	√	√	√	√	√				√
		6.	B.Sc. Physiotherapy	√	√	√	√	√	√				√
		7.	Bachelor of Medicine & Bachelor of Surgery	√	√	√	√	√	√				√
		8.	Doctor of Dental Surgery	√	√	√	√	√	√				√
		9.	B.Sc. Health Laboratory Science/tech.	√	√	√	√	√	√				√
		10.	B.Sc. Prosthetics/Orthotics	√	√	√	√	√	√				√
		11.	B.Sc. Biotechnology and Lab	√	√	√	√	√	√				√
		12.	B.Sc. Pharmacy	√	√	√	√	√	√				√
		13.	B.Sc. Environmental. Health Science	√	√	√	√	√	√				
		14.	B.Sc. Medical Laboratory Technology	√	√	√	√	√	√				√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		15.	Bachelor of Health Service Management (BHSM)	√	√	√	√	√	√				√
		16.	Bachelor of Medical Laboratory Science in Microbiology and Immunology	√	√	√	√	√	√				√
		17.	Bachelor of Medical Laboratory Sciences	√	√	√	√	√	√				√
		18.	Bachelor of Medical Laboratory Sciences in Clinical Chemistry	√	√	√	√	√	√				√
		19.	Bachelor of Medical Laboratory Sciences in Haematology and Blood Transfusion	√	√	√	√	√	√				√
		20.	Bachelor of Medical Laboratory Sciences in Histotechnology	√	√	√	√	√	√				√
		21.	Bachelor of Medical Laboratory Sciences in Parasitology and Medical Entomology	√	√	√	√	√	√				√
		22.	Bachelor of Pharmacy	√	√	√	√	√	√				√
		23.	B.Sc. Health Information Systems	√	√	√	√	√	√				√

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		24.	B.Sc. Human Nutrition	√	√	√	√	√	√				√
		25.	B.Sc. Midwifery	√	√	√	√	√	√				√
		26.	B.Sc. Nursing- Midwifery	√	√	√	√	√	√				√
		27.	B.Sc. Radiation Therapy Technology	√	√	√	√	√	√				√
7	Science	1.	B.Sc. Electronic Science & Communication	√	√	√	√	√				√	
		2.	B.Sc. Electronics	√	√	√	√	√				√	
		3.	B.Sc. in Computer Science	√	√	√	√	√	√				
		4.	B.Sc. Information Technology (B.Sc. IT)	√	√	√	√	√	√				
		5.	B.Sc. Information & Comm. Technology	√	√	√	√	√	√				
		6.	B.Sc. Business Information Systems	√	√	√	√	√	√				
		7.	B.Sc. Home Econ. & Human Nutrition	√	√	√	√	√	√				

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		8.	B.Sc. Applied Geology	√	√	√	√	√	√				
		9.	B.Sc. Hydrogeology	√	√	√	√	√	√				
		10.	B.Sc. Petroleum Geology	√	√	√	√	√	√				
		11.	B.Sc. Applied Geophysics	√	√	√	√	√	√				
		12.	B.Sc. Underground Water Studies	√	√	√	√	√	√				
		13.	B.Sc. Geology	√	√	√	√	√	√				
		14.	B.Sc. with Geology	√	√	√	√	√	√				
		15.	B.Sc. Physics	√	√	√	√	√	√				
		16.	B.Sc. Chemistry	√	√	√	√	√	√				
		17.	B.Sc. Biology	√	√	√	√	√	√				
		18.	B.Sc. Applied Zoology	√	√	√	√	√	√				

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		19.	B.Sc. Botanical Sciences	√	√	√	√	√	√				
		20.	B.Sc. Microbiology	√	√	√	√	√	√				
		21.	B.Sc. Molecular biology and Biotechnology	√	√	√	√	√	√				√
		22.	B.Sc. Mathematics	√	√	√	√	√	√				
		23.	B.Sc. Statistics	√	√	√	√	√	√				
		24.	B.Sc. Applied Statistics	√	√	√	√	√	√				
		25.	B.Sc. (General)	√	√	√	√	√					
		26.	B.Sc. Environmental Science & Management	√	√	√	√	√	√	√	√		
		27.	Bachelor of Environmental Health Sciences with IT	√	√	√	√	√	√	√	√		
		28.	B.Sc. Land Surveying	√	√	√	√	√	√	√	√		√
		29.	B.Sc. Geomatics	√	√	√	√	√	√	√	√		

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments	
		30.	B.Sc. Geoinformatics	√	√	√	√	√	√	√	√	
		31.	B.Sc. Telecommunications	√	√	√	√	√	√			
		32.	B.Sc. Virtual Education	√	√	√	√	√	√			
		33.	B.Sc. ICT Mediated Content Development	√	√	√	√	√	√			
		34.	B.Sc. Technologies and Animation	√	√	√	√	√	√			
		35.	B.Sc. Health Information Systems	√	√	√	√	√	√			
		36.	B.Sc. Informatics	√	√	√	√	√	√			
		37.	Bachelor of Computer Science	√	√	√	√	√	√			
		38.	BSc in Computer Science and IT	√	√	√	√	√	√			
		39.	Bachelor of Information Technology	√	√	√	√	√	√			
		40.	BSc in Business Information and Communication Technology	√	√	√	√	√	√			

SN	Cluster	SN	Programme Name	On Campus					Off Campus			Post Graduation Comprehensive Practical Training (World of Work) - Internship	
				Seminars	Projects	Laboratory	Simulations	Field Work	Field	Excursions	Attachments		
		41.	B.Sc. Laboratory Sciences	√	√	√	√	√		√			
		42.	B.Sc. Range Management	√	√	√	√	√					
		43.	B.Sc. with Education (Geography and Mathematics)	√	√	√	√	√					
		44.	B.Sc. Information Systems	√	√	√	√	√		√			
		45.	B.Sc. Geodetic Science	√	√	√	√	√		√	√	√	
		46.	B.Sc. Information Systems Management	√	√	√	√	√		√			
		47.	B.Sc. Environmental Laboratory Science Technology	√	√	√	√	√		√	√	√	√
		48.	B.Sc. Environmental Sciences and Management	√	√	√	√	√		√	√	√	√

PART FOUR

IMPLEMENTATION OF THE PTF

4.1 Roles and Responsibilities of Stakeholders

Practical training has many stakeholders. These include the students, higher learning institutions, supervisors, field attachment organizations or communities and the Government. In order for practical training to be implemented efficiently and effectively the role of each stakeholder must be clearly understood. In this regard, the entry point is at programme level, whereby the role each stakeholder is expected to play must be clearly stated.

4.1.1 Higher Learning Institution

Every higher learning institution must:

- a) integrate practical training into its curricula and have it reviewed periodically;
- b) provide overall institutional management of the practical training;
- c) seek possible collaborations with organizations in view of developing a mechanism, including Memorandum of Understanding, for the involvement of those organizations in the practical training activities of the institution such as provision of guest speakers, laboratory tools, simulators, placements and supervisors;
- d) develop internal guidelines and procedures for practical training aligned with this PTF;
- e) develop realistic financial framework that will enable it to implement practical training activities; and
- f) Collaborate with stakeholders and attract financial support for its programme activities, including practical training.

4.1.2 Partner Organizations

Partner organizations are expected to play the following roles:

- a) participate in the planning of practical training in collaboration with higher learning institutions;
- b) commit some of their resources for implementation of the practical training activities;
- c) provide technical and professional guidance to the students during practical training sessions; and
- d) participate in evaluating practical training activities and the performance of students during practical training and give feedback to the higher learning institution.

4.1.3 Students

Students are expected to:

- a. adhere to practical training guidelines and procedures;
- b. participate in various practical training modes and activities as part of their studies;
- c. Compile and submit reports and other forms of feedback as required by the guidelines.

4.2 Management of Practical Training

Practical training must be properly managed through effective coordination, monitoring and evaluation.

4.2.1 Coordination

- a) Practical training must be centrally coordinated within the higher learning institution through appropriate systems at all levels of the institutional management.
- b) All steps in the coordination must be stated clearly in the guidelines, including assessment and responsible actors in each activity.

4.2.2 Duration

While each programme may differ in terms of context of its practical training, the following are general benchmarks in terms of duration:

- a) Seminars should spread within a semester and should not be less than one hour per week for science based programmes and three hours per week for non science based programmes.
- b) Projects should spread within a semester and should not be less than one project per student but may be assessed at the end of the academic year.
- c) Simulations should spread within a semester and should not be less than one simulation per course.
- d) Laboratory and studio work should spread within a semester and should not be less than three hours per week per semester.
- e) Excursions may be organized at any time during the academic year and last for the duration determined by the institution.
- f) On campus fieldwork should spread within a semester and should not be less than one fieldwork per student and may be assessed at the end of the course.
- g) Off campus fieldwork and attachments should have a minimum of six and a maximum of eight weeks per each session.
- h) Post graduation comprehensive practical training will last for a minimum of one year.

4.2.3 Supervision

Proper supervision shall be required in all aspects of practical training.

- a) Heads of departments must ensure that all practical training activities are properly supervised by a qualified academic

staff with a background relevant to the student's course of study.

- b) Supervision procedures must be clearly shown in the internal guidelines on each practical training mode.
- c) For field attachment and relevant fieldwork, the organization where the attachment or field work is to take place should provide supervisor(s) who will assist and give an assessment to the students.

4.2.4 Financing Practical Training

The efficiency of all aspects of practical training depends very much on the way such aspects are financed.

- a) The fee structure of each programme is assumed to include the cost of training the student at both theoretical and practical training level.
- b) Higher learning institutions are free to solicit extra funding to subsidize the costs of practical training. These include the possibility of temporary employment for students in different organisations.
- c) Stakeholders such as employers, industries and professional bodies should strive to promote practical training through different mechanisms such as direct sponsorship packages, hosting skills development camps or clinics and giving lectures on topical issues.

4.2.5 Infrastructure and Other Resources

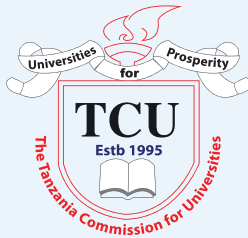
Suitable infrastructure is critical for the attainment of the practical training goals and objectives. It is thus the responsibility of the higher learning institutions to ensure the availability of suitable infrastructure for practical training, both on and off-campus, as may be required by the nature of each programme.

4.2.6 Other Issues

Higher learning institutions must take into account needs of the various groups of students especially those with special needs when planning and implementing practical training activities.

4.2.7 Monitoring and evaluation

Each higher learning institution must put in place a mechanism for the monitoring and evaluation of practical training. This mechanism should ensure sufficient involvement of stakeholders.



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