UNIVERSITY OF DAR ES SALAAM

COLLEGE OF INFORMATION AND COMMUNICATION TECHNOLOGIES

PRACTICAL TRAININGREGULATIONS

AND

GUIDELINES FOR REPORT WRITING

Reviewed by CoICT PT Coordinators

September, 2020

TABLE OF CONTENTS

PRACTICAL TRAINING RULES AND REGULATIONS

1.1 INTRODUCTION

Practical Training (PT) is an essential integral part of degree programmes offered by College of Information and Communication Technologies (CoICT) at the University of Dar es salaam (UDSM). It is conducted after the second semester of each academic year for a period of eight (8) weeks unless otherwise stated. Each practical training term shall be treated as a course of the succeeding academic year. Each PT shall be assessed and the grade obtained shall count towards the final degree award. Each PT is a two (2) unit course. Practical Training for 1st, 2nd and 3rd year students is referred to as PTI, PTII and PTIII respectively. While on PT, students are paid living allowance by their sponsors.

The main objective of PT is to provide an opportunity for the students to merge theory and practical. PT offers valuable experience in real life situation that cannot be simulated in lecture rooms, laboratories or college workshops. Through PT, students can enhance their skills, knowledge, work ability and altitude towards their area of specialization. They also learn to get acquainted with organization and management problems, to practice aspects of human relations, to cultivate thinking altitude in terms of costs, efficiency and quality outputs. Therefore, PT forms a foundation towards producing competent scientists and engineers in our society.

This booklet provides information on PT regulations and guidelines important not only to students but also to industrial training officers and college academic staff. The user of this booklet is urged to focus his/her attention throughout the book as well as on the sample PT forms included in the appendix section. The forms aim to guide students, industrial training officers and academic supervisors, on the criteria to be used during PT supervision and assessment.

1.2 PT OBJECTIVES

The PT programme seeks:

i. To expose students to the various research and/or production activities being carried out in different parts of the country;
ii. To enable students to apply their knowledge in practice;
iii. To ensure that, on leaving the University, graduates have acquired some appropriate work experience;
iv. To establish and maintain contact between prospective employers and the University in order to ensure that students are given the appropriate skills and knowledge for the jobs they are likely to be called upon to perform after graduation;
v. To enable prospective employers and employees to become acquainted with one another in a working environment

1.3 PT REGULATIONS

The following regulations shall apply for PT;

i. For each 3-year degree programme, there shall be two PT sessions and three PT sessions for a 4-year programme. The minimum duration for each PT session is 8 weeks, unless otherwise stated. The PT shall be conducted after the end of the first and second academic year for the 3-year programme, and at the end of the first, second and third academic years for the 4-year programme.
ii. Each PT shall be treated as a course of the succeeding academic year. Example, PT1 (done in first year) results will be included in the second year results.
iii. Each PT shall be assessed and the grade obtained shall count towards the final degree award. The total weight of the PTs will be determined as for any other course, based on the number of contact hours. Each PT will contribute 2 units.
iv. A student who, for good reasons, could not complete PT to satisfy the respective College Board will be assigned an "INC" grade for that PT and will

be required to complete that particular part of the training within a certain period as will be specified by the College Board.

v. A student who could not complete PT for reasons other than those stipulated in v. above, will be considered to have absconded the PT, and shall be discontinued.

vi. Practical Training reports will be handed in for assessment latest by FRIDAY of the **second week** of the first semester of the succeeding academic year.

vii. Internal assessment shall be completed before the end of the first semester.

viii. A student who fails in a PT shall supplement the PT before starting the next one, provided that his/her has a GPA in that major subject is 1.8 or higher.

ix. A student who fails in a supplementary PT and has a GPA of less than 2.0 shall be discontinued forthwith.

x. Students who do not go to places allocated to them for PT without satisfactory reasons will be deemed to have absconded from their PT and will, as a result, be discontinued from their studies.

xi. Students who go to the allocated PT places but refuse to follow the training programme will be deemed to have absconded and consequently shall be discontinued from studies.

xii. Travel and living allowances for PT will be payable to students by their sponsors before proceeding to their respective PT places.

1.4 PT ASSESSMENT

PT assessment will be based on the following items:

- Employers Assessment 10%
- Logbook 20%
- Final Report 60%
- Supervisor's Report 10%
- **TOTAL 100%**

1.4.1 Training Officer's Assessment

Assessment by the Training Officer/ Industrial Supervisor shall include the following;

i. Skills obtained by the student during PT,
ii. Attitude towards practical work,
iii. Initiative, motivation and diligence,
iv. Reliability in carrying out duties, and
v. Punctuality to work,
vi. General attendance,
vii. Ability to work for all normal working hours,
viii. Cooperation with juniors and seniors,
ix. Ability to work independently, and
x. Suitability to work with the organisation.

The Training Officer, using an assessment form shall grade the items listed above using the following weighting:

5 = Excellent, 4 = Good, 3 = Very Good, 2 = Fair, 1 = Poor and 0 = Very Poor.

The total marks (out of 100%) is obtained by summing all the marks on individual items and multiplied by 2.

The training certificate is to be treated as **confidential** document. It must be signed, stamped and sealed, then posted to the college by the employer. Alternatively, a student is responsible to bring the duly completed training certificate together with his/her log book and a report to his/her respective department. The term "certificate duly completed" means the certificate is **filled in all relevant spaces, signed, rubber stamped** and **SEALED**.

1.4.2 Assessment of Logbooks

The logbook is a day to day data collection describing the actual jobs the student has performed. The logbook must give through information on daily tasks performed by the student to an "outsider". The logbooks should contain description of activities and tasks assigned to students, output from such activities and remarks by the employer. The employer shall sign the document on weekly basis. The logbook shall

be submitted to the University supervisor together with the final report. All students are required to make sure that their logbooks are signed and rubber stamped weekly by the respective training officers and in case of failing to do so, the logbook will be taken as incomplete. The grading of the logbook shall be marked out of 20% based on the criteria shown in following:

i. Content relevance 5%
ii. Drawing precision and neatness 5%
iii. Clear description of activities 5%
iv. Overall neatness 5%

1.4.3 Assessment of Final PT Report

Every student shall submit one report for each Practical Training course, which should be prepared in accordance with the guidelines. Reports should comprise not less than 10 pages or more than 20 pages of A4. Before being handed to the department for assessment, the completed report has to be signed by the student, and MUST be **countersigned** and **rubberstamped** by the training officer of the Institution/Company/Organization in which the student was trained. All reports must reach the department latest by FRIDAY of the second week of the first semester of the subsequent academic year. All late submissions will lead to deduction of marks. After evaluation the report will be returned to the student. Final report contributes 60% of the total PT marks.

Relevance of the content of final reports will depend on the year of study.

1.5 PT RESOURCES

Before a student goes to the PT working place he/she must make sure to have collected the following documents from CoICT;

i. **Introduction letter**

   This is a letter from CoICT that introduces a student to his/her employer for PT course.

ii. **Arrival Note**

The arrival notes are supposed to be filled by students, stamped and signed by the training officer, and uploaded to the Practical Training Management System (PTMS) within the first week of PT. Students are responsible to ensure that his/her **filled in, signed and stamped** arrival note has reached the respective department.

iii. Training Certificate

This document should be handed over to the training officer on the first day of PT. The training certificate is to be treated as **confidential** document. It must be **signed, stamped** and **sealed**, then posted to the college by the employer. Alternatively, a student is responsible to bring the duly completed training certificate together with his/her report (log book and main report) to his/her respective department. The term "certificate duly completed" means the certificate is **filled in all relevant spaces, signed, rubber stamped** and **SEALED**.

iv. PT Guideline

The guideline should be considered as your reference book with regards to all matters concerning PT. The guideline shall be supplemented by PT coordinators, please do not hesitate to contact PT coordinators at any time in regard to PT related matters.cc

1.6 SOLICITING AND ALLOCATION OF PRACTICAL TRAINING

i. PT coordinators, together with individual students shall solicit suitable training places.

ii. Training places proposed by students are welcome and must be reported before the end of 14thweek of the second semester. All places proposed by students need to be approved by the department and/or college.

iii. A student is not allowed to change the allocated PT place without the prior approval of the department. In case there is a serious need to change the allocated PT place, a student should communicate with his/her respective PT coordinators for approval while he/she is still at his/her PT place.

iv. Students who do not go to their approved and allocated PT places without satisfactory reasons will be deemed to have absconded from their PT and will, as result, be discontinued from their studies.

v. The allocation of PT places is undertaken by the respective departments or college PT-coordination team. Training at a place not approved and not allocated by the Department will not be recognized, which means a student will be deemed to have absconded from their PT course and hence be discontinued from their studies.

1.7 ROLES OF ACADEMIC SUPERVISORS

Each student will be visited at least once by an academic staff from the respective department or from the college. PT supervision of students in their PT places is supposed to commence from the 3rd week during their PT time. When the supervisor arrives at the industry, the best person to contact is the training officer who should take him/her to meet the students. During this visit, the supervisor must make sure that:

i. All students allocated in that PT place are present.
ii. They have a company/industrial supervisor for their day to day activities
iii. They have a training programme prepared by the company
iv. They have uploaded their "Arrival Notes" to their respective PTMS accounts.
v. And they have selected a topic for their final PT report.

It is advised that the supervisor request to take a tour around the factory/company/organization/institute, in which students can describe different activities conducted during this tour. This will enable the supervisor to check if the training program covers all the important activities and if the place is suitable for PT course. The purpose of the academic supervisor's visit is to assess the PT course, discuss problems of mutual interest, as well as to contribute/discuss for improvement, the training programme and PT report writing.

The academic supervisor is supposed to assess the students by using the on-site assessment form as shown in Appendix B.

1.8 ROLES OF INDUSTRIAL SUPERVISORS

The person responsible for the day-to-day supervision of the students during their PT time is the Industrial Supervisor/Training Officer. He/she is a representative of the company or firm in which the student is working, and should be appointed by the company from among the senior technical personnel. Duties of the Training Officer are:

i. To prepare a suitable training programme in writing for the student. The student should ensure that the training program for eight weeks of their PT time is set up (by their training officer) before the end of the first week of PT.
ii. To administer and follow up the training programme
iii. To sign the student's report and logbook once a week
iv. To assess the student at the end of their PT time by filling in the training certificate, make sure that it is signed and stamped by the responsible personnel.

Being responsible adults, students are expected to work independently requiring minimum supervision from the Training Officer throughout the PT time. The training officer is advised to treat students (during their PT time) just like any other worker reporting to him/her in terms of productivity, efficiency and discipline.

GUIDELINES FOR PRACTICAL TRAINING REPORT WRITING

2.1 INTRODUCTION

PT report is a key to assess and grade the knowledge students has acquired from the industrial training. As stated earlier each industrial training term shall be treated as a course of the succeeding academic year.PT reports are assessed and the grade obtained shall count towards the final degree award. Each PT is a two (2) unit course and every student shall submit one report for each Practical Training period, which must be prepared in accordance with this guidelines.

The main report should comprise of not less than 10 pages and not more than 20 pages of A4.Before being handed to the department for assessment, the completed report has to be **signed by the student and MUST be countersigned and stamped by the Training officer** of the Institution/Company/Organization in which the student was trained. All reports must reach the department PT Coordinators by **Friday** of the **second week** of the first semester of the subsequent academic year. All late submissions will lead to deduction of marks.

2.2 STRUCTURE OF THE REPORTS

The structure and content of final reports depends on the year of study.

For students who are doing their last PT (i.e., PT3 for a four-year programme and PT2 for a three-year programme) the company/organisation profile chapter should not be included in their reports; however the main task report should comprise of the standard report required pages (not less than 10 pages and not more than 20 pages of A4). Here the main task contains all 60% marks of overall PT assessment.

For students who are not doing their last PT (i.e. PT1 & PT2 for a four-year programme and PT1 for a three-year programme) the main report should contain two chapters, the company/organisation profile and the main task. These two

chapters combined should comprise of the standard report required pages (not less than 10 pages and not more than 20 pages of A4). Here the company profile contains 20% whilst the main task contains all 40% marks of overall PT assessment.

The structure, style and contents of the reports are further described as follows;

2.2.1 Typography and style – font, page numbering

Paper: Your report must be printed (or handwritten for logbooks) on A4 size white paper. Paper of a larger size up to A3 may be used for maps, plans, diagrams and illustrative material forming part of the report.

Page Numbering: Pages should be numbered consecutively and preferably positioned at the bottom centre of the page. Pages must be single-sided. You can paginate the preliminaries (portions preceding the Introduction) in lower case Roman numerals (i, ii, iii, etc.) and pages of the main report in Arabic numerals (1, 2, 3, etc. it is not required to number the logbook pages.

Text format: Your main report must be typed (logbooks can be handwritten). The text should be in 1.5 line spacing and have a standard font size of 12 using Times New Roman font style. Headings should be in a font size no larger than 14.

Titles: Titles and subtitles (sections) should be numbered and styled in an orderly manner. There are two possible styles, you may capitalize every significant word, or you may capitalize the entire title.

2.2.2 Cover Page

All PT reports should contain a **uniform cover page**. The sample cover page is appended to this document, see Appendix A.

2.2.3 Inside Pages

The inside pages should contain the following contents in the given orderly manner;

Abstract

Give a brief summary (One page only) of the report, which includes brief description of the identified problem that is addressed in this report. Methodology used to

address/solve the problem. Briefly describe achievements gained during PT period and on handling the main task described in this report. Write about this report structure, and briefly about encountered problems and suggestions/recommendations.

Acknowledgements

It is important to acknowledge all assistance and contributions made by other people to your overall PT and report writing. Student can acknowledge anyone such as employees of the organization who contributed much towards his/her participation and achievement during PT period.

Table of Contents

List main chapters and their subtopics covered by the report and indicate respective page number from which those chapters and subtopics are located within the report.

List of Abbreviations

List down all symbols, abbreviations and nomenclature against their long format/meaning as used in the entire report in an alphabetical manner. Example;

CoICT	College of Information and Communication Technologies
IP	Internet Protocol
TTCL	Tanzania Telecommunications Company Limited

List of Tables

This should list, with page numbers, all the tables in the report, in the order in which they appear in the report.

List of Figures

This should list, with page numbers, all the schematics, photographs, photocopies, diagrams, and the like that are in the report, in the order in which they appear in the report. Tables and figures inside the report must be captioned.

2.3 MAIN REPORT

(You can leave a blank space and start chapter 1 in new fresh page)

2.3.1 Chapter 1: The Company/Organization Profile

i. Give an introduction of the company/organization where you are trained (including the name and its nature, physical location, historical background, founders (if any), vision and mission and main activities/core functions of the company/organization.
ii. Draw an organizational chart of the company/organization where you are being trained.
iii. Write about job descriptions of skilled workers (work performed, skills and knowledge required, experience, educational background).
iv. Discuss about safety regulations and general welfare, recruitment and training policies of the company.
v. Describe how the organizational structure of the company has been set strategically to accomplish core functions

(Start chapter 2 in a fresh page)

2.3.2 Chapter 2: Main Task(s)

The main task to write report about it will be selected by the student with the assistance of the academic supervisor during his/her visit. The following subtopics are to be included in the main task´s part of the report.

i. Clearly explain problem identification
ii. Provide clear description of proposed solution on solving the problem and assumption (s) made
iii. Write about justification of the chosen solution
iv. Draw diagrams or a flow chart of the proposed solution, showing the main steps. For each main step, (where applicable) give further details about the functional and technical requirements towards implementation of proposed

solution. (Describe the required functionalities, hardware and software or required machinery/equipment).

v. Discuss and compare alternative solutions for solving the problem or for improvement

vi. Challenges

Student can add description of challenges encountered during PT period, such as:

- ~ Lack of required resources (hardware and/or required-software),
- ~ Lack of skill(s) required to accomplish assigned task(s),
- ~ Assignment of task(s) not in scope of student level of study
- ~ Shortage of time

Students may provide recommendation and suggestion on addressing encountered challenges to let the Department and other students learn on how to overcome those challenges.

vii. Conclusion and Recommendation

Write on the achievement of the main task and PT course in general. Recommendation can be classified, but not limited to the following categories:

- ~ Further studies: Student may recommend further study to be taken on assigned task(s) by showing way forward and suggest timeframe from which he/she could proceed with such study
- ~ PT Programme improvement: Suggest task(s) that could be assigned to student based on their study level/material covered
- ~ Recommend study areas whose theories should be covered before student assigned task(s)mentioned above
- ~ Recommend/suggest any relevant issues that could lead to improvement of PT programme for organization and for the college/university

viii. References

All references should appear in the main text and be listed alphabetically, in the references section of the report.

ix. Appendices

Extra resources such as diagrams, codes and/or pictures used or resulted towards/after implementation of proposed solution of main task can be included in the report as appendices. The diagram/picture can be a Graphical User Interface of a program, Flowcharts, Data Flow Diagram, Entity-Relationship Diagram, Charts, Graphs, Tables, sample calculations, etc.

2.4 WEEKLY REPORTS (LOG BOOKS)

This part consists of weekly reports (log books) written for eight weeks of the practical training period.

Note: The main report and the weekly reports should be binded together for submission.

2.5 PLAGIARISM, SYNDICATION AND FRAUD

While keeping to this guiding, student should feel free to include any other material that he/she considers appropriate and relevant to appear in the report. All reports should follow strictly the guidelines about plagiarism as stipulated in the university. Plagiarism includes;

- ~ Copying someone else's work
- ~ Borrowing the phrases and clauses from the original source without citing the author
- ~ Copying or paraphrasing content from the internet

All content of the PT report must be well cited to avoid plagiarism and students must avoid copying contents from the internet.

SCOPE OF PT ACTIVITIES FOR COICT STUDENTS

3.1 INTRODUCTION

The College has drafted this scope of practical training in line with the needs to be fulfilled by curriculum of academic program mainly to facilitate the industry/organization in their effort to better plan the training programs for the students. Without affecting the general objective of the practical training as stipulated in academic curriculum in accordance with the scope determined by the College, however, an organization/industry may feel fit to amend this scope of the training program to suit their organizational activities and needs.

This scope of the PT program is intended to provide:

a) Exposure to different types of jobs in the industry/organization by performing tasks such as data collection, testing, fixing and managing equipment, designing, developing systems, and managing resources while under supervision;
b) Understanding of the whole process and operational system such as production operation, evaluation and analysis; and
c) Training in management and administration.

It is suggested that students during their Practical Training in industry should be assigned duties according to the curriculum of the academic program. Sample selection of tasks which could be performed by students during their practical training according to their academic program/level is listed in Section 2. The effectiveness of training will be increased if students get assignments of different nature e.g. in different departments or sections of the organisation.

In general, it is suggested that students during their Practical Training in industry should be assigned duties on the following levels: -

- 1st year students on Craftsman level
- 2nd year students on Technician/foreman level
- 3rd year students on Engineer level

3.2 PT FOR COMPUTER SCIENCE (CS) STUDENTS

3.2.1 Activities and Tasks for Year 1 CS Students

It is important for supervisor to cross-check whether a kind of activity assigned to a student is relevant to his/her level of study. The Department of Computer Science and Engineering recommends the following list of activities for fist year students: -

i. Assemble and disassemble computer hardware and peripherals;
ii. Troubleshoot and maintain computer hardware and peripherals;
iii. Troubleshoot and maintain both wired and wireless network operations;
iv. Install, configure, operate and maintain any type of computer-based software;
v. Graphics design and development; and
vi. Program design and coding using various programming languages.

3.2.2 Activities and Tasks for Year II CS Students

The recommended tasks for second year Computer Science students include the following:

i. Assemble and disassemble computer hardware, peripherals and network devices;
ii. Troubleshoot and maintain computer hardware, peripherals and network devices;
iii. Analyse, design and develop networking software;
iv. Analyse, design and setup both wired and wireless network infrastructure;
v. Troubleshoot and maintain both wired and wireless network operation;
vi. Install, configure, operate and maintain any type of computer-based software;
vii. Design and develop both wired and wireless network applications;
viii. Design and develop graphics; and
ix. Program design and coding using various programming languages.

NOTE that, the list of tasks grouped above should be treated as guidelines and supervisor can recommend any other activity not included in these lists as he/she may see fit for student with reference to the courses covered.

3.3 PT FOR BUSINESS INFORMATION TECHNOLOGY (BIT) STUDENTS

The goal of Business Information Technology (BIT) programme is to produce quality business information technologist graduates of high intellectual standard and caliber, capable of designing, developing and maintaining business software and IT systems. In particular, a BIT graduate will accrue skills that enable them to engage in production of applications built on a web platform, game development, project management by understanding the nature of various ICT projects and project activities as a whole in the organisation, digital enabled entrepreneurial work, as well as the mastery of modern ICT technologies.

Therefore the practical training will consolidate their understanding of the basic principles of information management from the point of view of developing the operations; i.e., build ability to specify, design and test software, databases and user interfaces; be able to document and interpret documentation while maintaining software and to design and implement training.

3.3.1 Activities and Tasks for Year I BIT Students

The recommended tasks for first year BIT students shall include the following, though not limited to:

(i) Working with various ICT technologies that implement business processes: from operation, management and maintenance

(ii) Digitalisation and content management to support business marketing and information dissemination

(iii) Managing web-based applications and e-services for business

(iv) Involvement in particular product development process that make use of IT, such as e-business applications, from ideation to a finished product and/or its management, marketing and commercialisation

(v) Analysis and design to foster utilization of various innovation methods to support business and marketing, entrepreneurship, information systems that support business or graphic communication that utilises digital media.

(vi) Involvement in entrepreneurship: Use and management of IT tools/platforms for managing agreements, offers, licences and copyrights in work environment and customer services.

(vii) Social media content design and management to support digital business

(viii) Management of business, interaction skills, online business and online store technologies

(ix) Product management for various technologies

(x) Operating Web technologies for business Marketing

3.3.2 Activities and Tasks for Year II BIT Students

The recommended tasks for first year BIT students shall include the following, though not limited to:

(i) Content design, digitalisation and management to support e-business marketing and dissemination

(ii) Engagement in specific projects that are carried out in particular fields of ICT or business that actively make use of the ICT technologies, including risk identification and mitigation in both ICT projects and entrepreneurship

(iii) Active involvement in particular product development process that make use of IT, such as e-business applications, from ideation to a finished product and/or its management, marketing and commercialisation

(iv) Programming web-based applications and services for e-business

(v) Creative concept design and utilization of various innovation methods to support business and marketing, entrepreneurship, information systems that support business or graphic communication that utilises digital media.

(vi) Analysis of key processes and functions of business to articulate the importance of IT as a part of the organisation's functioning and its role in developing the business operations.

(vii) Social media content design, development and management to support business

(viii) Development of Web technologies for business Marketing

(ix) Software design, programming, design specifications and project work involvement

(x) Management of outsourced IT applications, specifications, information management tasks, information system infrastructures and related technologies

(xi) Game development and entrepreneurship

3.4 PT FOR ELECTRONICS SCIENCE AND COMMUNICATION (ESC) STUDENTS

Electronics Science and Communication degree is ubiquitous applied science degree programme bridging science and technology by imparting knowledge to students in the fields of electronics, communication and computer science Therefore, the PT for the first year students should be attached to IT related department or electronics related workshop/industries/institutions. Second year students can be attached to an IT, electronics or telecommunications related units.

3.4.1 Activities and Tasks for Year 1 ESC Students

In the first year emphasis is in teaching computer science subjects with a small dose of electronics. The students are limited in practical knowledge hence need close supervision but still can be assigned activities to practice the following tasks: -

a) IT Tasks

i. Assembling and disassembling of computer hardware and peripherals;

ii. Troubleshooting and maintenance of computer hardware and peripherals;

iii. Installation, configuration, operation and maintenance of computer-based software;

iv. Graphics design and development;

v. Program design and coding using various programming languages.

b) Electronics Tasks

i. Read and draw simple technical drawing;
ii. Identify and test electronics components;
iii. Read, trace and interpret simple electronic circuits; and
iv. Measure and analyze electronic signal quantities using standard measurement equipment.

3.4.2 Activities and Tasks for Year IIESC Students

In the second year students take more courses in the electronics and computer science together with some introductory knowledge in telecommunications. The students are more mature professionally and should be possible for them to work relatively independent and be given opportunity to guide junior staff. They should be able to learn and practice workers' rules and regulations, public relations and cooperation as well as be able to do the following activities: -

a) IT Tasks

i. Troubleshoot, assemble and disassemble computer hardware, peripherals and network devices;
ii. Troubleshoot, maintain, analyze, design, develop and set-up of both wired and wireless network infrastructure and network software;
iii. Install, configure, operate and maintain any type of computer-based software; and
iv. Design and develop graphics, program design and coding using various programming languages.

b) Electronics Tasks

i. Troubleshoot malfunctioning systems;
ii. Repair of simple faulty electronics circuits;
iii. Install an electronic system;
iv. Identify building blocks of basic instruments and describe how they work; and
v. Identification, selection of electronics components and design of electronic circuits

c) Communications Tasks

i. Troubleshoot malfunctioning telecommunication/electronics systems;

ii. Install communication systems;
iii. Understand principles and practice of telecommunications;
iv. Manage the different telecommunications sections, namely the radio, switching; transmission, and power plant units;
v. Understand and practice planning and customer care activities.

3.5 PT FOR ELECTRONICS ENGINEERING (ELE) STUDENTS

The main objective of the programme is to prepare graduates for professional and supervisory positions in the field of electronics engineering. In the first and second year, the PT programme is the same as ESC students, while for third and fourth year, more emphasis is put on the advanced concepts of engineering in the high-tech electronics industry environment.

3.5.1 Activities and Tasks for Year I ELE Students

In the first year emphasis is in teaching electronics and well as computer science subjects. The students are limited in practical knowledge hence need close supervision but still can be assigned activities to practice the following tasks: -

a) IT Tasks

vi. Assembling and disassembling of computer hardware and peripherals;
vii. Troubleshooting and maintenance of computer hardware and peripherals;
viii. Installation, configuration, operation and maintenance of computer-based software;
ix. Graphics design and development;
x. Program design and coding using various programming languages;

b) Electronics Tasks

v. Read and draw simple technical drawing;
vi. Identify and test electronics components;
vii. Read, trace and interpret simple electronic circuits; and
viii. Measure and analyze electronic signal quantities using standard measurement equipment.

3.5.2 Activities and Tasks for Year II ELE Students

In the second year students take more courses in the electronics and computer science together with some introductory knowledge in telecommunications. The students are more mature professionally and should be possible for them to work relatively independent and be given opportunity to guide junior staff. They should be able to learn and practice workers' rules and regulations, public relations and cooperation as well as be able to do the following activities: -

a) IT Tasks

v. Troubleshoot, assemble and disassemble computer hardware, peripherals and network devices;
vi. Troubleshoot, maintain, analyze, design, develop and set-up of both wired and wireless network infrastructure and network software;
vii. Install, configure, operate and maintain any type of computer-based software; and
viii. Design and develop graphics, program design and coding using various programming languages.

b) Electronics Tasks

vi. Troubleshoot malfunctioning systems;
vii. Repair of simple faulty electronics circuits;
viii. Install an electronic system;
ix. Identify building blocks of basic instruments and describe how they work; and
x. Identification, selection of electronics components and design of electronic circuits

c) Communications Tasks

vi. Troubleshoot malfunctioning telecommunication/electronics systems;
vii. Install communication systems;
viii. Understand principles and practice of telecommunications;
ix. Manage the different telecommunications sections, namely the radio, switching; transmission, and power plant units;
x. Understand and practice planning and customer care activities.

3.5.3 Activities and Tasks for Year III ELE Students

In the third year students concentrate more on advanced concepts of engineering in the high-tech electronics industry environment. The students are more mature professionally and should be able to work as engineers. They should be able to learn and practice engineering rules and regulations, project designs, planning, and managements as elaborated in the following activities: -

a) Design and Planning

i. To calculate, design and plan electrical, electronics, and telecommunications engineering projects;
ii. To assess the technical, economic and social viability of projects variants;
iii. To prepare systems requirements analysis;
iv. To draw up specifications from drawings;
v. To prepare bills of quantities for various projects;
vi. To draft work programmes; and
vii. To troubleshoot problems such as link failure, system failure, and system outage.

b) System, Site and Plant Management

i. To control progress of work and to report on it;
ii. To plan, organize and control the operation of electrical, electronics, and telecommunications; and
iii. To deal with problems of labor management and staff regulations.

3.6 PT FOR TELECOMMUNICATIONS ENGINEERING (TE) STUDENTS

3.6.1 Activities and Tasks for Year I TE Students (PT1)

Students in their first year of study are assumed not to have any substantial technical knowledge in their field of specialization except the workshop training. Therefore, these students doing PT1 are at the professional level of craftsman and, hence, more guidance is needed from industrial supervisors. During their PT1, first year Telecommunications Engineering students are expected to focus on:-

a) General Tasks

i. To read wiring diagrams and technical drawings as used in industry;
ii. To identify materials;
iii. To identify semi-finished products;
iv. To identity components and installations;
v. To measure electrical quantities;
vi. To measure signals and electrical noise using available equipment;
vii. To test components and installations using available equipment; and
viii. To learn about the components of telecommunications network.

b) Production Work

i. To understand basic principles and procedures of manufacturing electrical, electronics and telecommunications components and devices such as wires, electrical devices, electronics devices optical devices, and semiconductor devices; and
ii. To understand basic principles and procedures of manufacturing systems from various components and devices.

c) Installation Work

i. To secure and fix electrical and electronics components, devices, equipment, modems, and modules;
ii. To install trunks, conduits, power and network cables for electrical and communications signals; and
iii. To wire installations.

d) Maintenance and Repair

i. To diagnose, locate and rectify faults in devices and in systems;
ii. To troubleshoot various systems' faults – hardware and software;
iii. To solve various systems' faults in hardware and software ; and
iv. To do maintenance work on electrical installation and equipment, modules.

3.6.2 Activities and Tasks for Year 2 TE Students (PT2)

Students in their second year of study already possess some basic knowledge in their area of study and should be given an opportunity to familiarize themselves with the requirements of professional practice; hence they are at Technician/foreman level. After completion of the 2nd year of study, students should be able to:

i. Assist a technician, technical assistant, foreman or the like in his/her day-to-day duties;
ii. Work under the supervision of an engineer;
iii. Perform duties of higher responsibility duties of higher responsibility.

Student of the 2nd year should perform the following duties after proper instruction.

a) General Tasks

i. To do wiring diagrams and technical drawings as used in industry;
ii. To identify specific materials;
iii. To participate in making semi-finished products;
iv. To measure signals and electrical noise using available equipment;
v. To test components and installations using available equipment;
vi. To learn about the components of telecommunications network.
vii. To apply relevant regulations for the electrical, electronics, ICT and telecommunications equipment and systems;
viii. To test finished work according to specifications;
ix. To report on test result; and
x. To control industrial safety.

b) Production Work

i. To manufacture and test electrical, electronics, and telecommunications components, systems and equipment;
ii. To apply basic principles and procedures in manufacturing electrical, electronics and telecommunications components and devices such as wires, electrical devices, electronics devices optical devices, and semiconductor devices; and
iii. To apply basic principles and procedures of manufacturing systems from various components and devices.

c) Work Organization and Management

i. To supply, handle and store materials and equipment;
ii. To set the working load and to instruct workers on site;
iii. To keep progress charts;
iv. To watch for faulty workmanship or material incorporated in the works; and
v. To prepare and organize a site.

d) Operation, Maintenance and Repair

i. To operate and control electrical plant, equipment, electronics systems, and ICT systems
ii. To diagnose, locate and rectify electrical and electronics faults;
iii. To plan and organize overhauls and refurbishments of systems; and
iv. To produce and substitute spare parts.

3.6.3 Activities and Tasks for Year III TE Students (PT3)

Students in their third year of study already possess substantial technical knowledge in their area of study and should be given an opportunity to familiarize themselves with the requirements of professional practice. Therefore students doing PT3 should work in the capacity of Professional Engineer skills and preferably work with and be directly responsible to an engineer. They should also work independently on problems of telecommunications engineering and ICT as preparation for their future work as engineers. Students should get involved in the following tasks: -

a) Design and Planning

viii. To calculate, design and plan electrical, electronics, and telecommunications or computer systems engineering projects;
ix. To assess the technical, economic and social viability of projects variants;
x. To prepare systems requirements analysis;
xi. To draw up specifications from drawings;
xii. To prepare bills of quantities for various projects;
xiii. To draft work programmes; and
xiv. To troubleshoot problems such as link failure, system failure, and system outage.

b) System, Site and Plant Management

iv. To control progress of work and to report on it;

v. To plan, organize and control the operation of electrical, electronics, telecommunications and computer system and equipment; and

vi. To deal with problems of labor management and staff regulations.

3.7 PT FOR COMPUTER ENGINEERING AND IT STUDENTS

3.7.1 Activities and Tasks for Year I CEIT Students (PT1)

Students in their first year of study are assumed not yet to have any substantial technical knowledge in their field of specialization except workshop training and, therefore, Computer Engineering and IT students doing PT1 need more guidance from industrial supervisors. First year Computer Engineering and IT students are expected to focus on the following recommended tasks and activities: -

i. To read wiring diagrams and drawing as used in industry;

ii. To identify engineering materials;

iii. To identity systems' components and installations;

iv. To do network troubleshooting and configuration in PC;

v. To identify different network cables and termination of cables;

vi. To assemble and disassemble computer hardware and peripherals;

vii. To troubleshoot and maintain computer hardware and peripherals;

viii. To troubleshoot and maintain both wired and wireless network operations;

ix. To install, configure, operate and maintain any type of computer-based software;

x. To measure electrical and electronics signals and noise using available equipment; and

xi. To test components and installations using available equipment.

3.7.2 Activities and Tasks for Year II CEIT Students (PT2)

Students in their second year of study already possess some basic knowledge in their area of study and should be given an opportunity to familiarize themselves with the requirements of professional practice. After completion of the 2nd year of study, students should be able to assist as a technician, technical assistant, foreman or the like in his/her day-to-day duties; or he/she should be able to work under the supervision of an engineer; or he/she should be able to perform duties of higher responsibility. After proper instructions, students of 2nd year should perform the following duties: -

a) General Tasks

i. To apply relevant regulations for ICT equipment;
ii. To test finished work according to specifications;
iii. To report on test results; and
iv. To control industrial safety.

b) Production Work

i. To produce and test ICT services components and equipment;
ii. To design ICT services;
iii. To watch for faulty workmanship or material incorporated in the works;
iv. To prepare and organize a site;
v. To do graphics design and development; and
vi. To do program design and coding using various programming languages.

3.7.3 Activities and Tasks for Year III CEIT Students (PT3)

Students in their third year of study already possess substantial technical knowledge in their area of study and should be given an opportunity to familiarize themselves with the requirements of professional practice. Therefore, students doing PT 3 should work in the capacity of Professional Engineer skills and preferably work with and be directly responsible to an engineer. They should also work independently on

problems of ICT as preparation for their future work as engineers. Students should get involved in the following tasks: -

a) Design and Planning

i. To calculate, design and plan electrical, telecommunication or computer systems engineering projects;
ii. To assess the technical, economic and social viability of projects variants;
iii. To prepare systems requirements analysis;
iv. To draw up specifications from drawings;
v. To prepare bills of quantities;
vi. To draft work programmes; and
vii. Troubleshooting problems such as link failure, system failure, and system outage.

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b) System, Site and Plant Management

i. To control progress of work and to report on it;
ii. To plan, organize and control the operation of electrical, telecommunication or computer system and equipment; and
iii. To deal with problems of labor management and staff regulations.

APPENDIX A: Sample Front Page

UNIVERSITY OF DAR ES SALAAM

COLLEGE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (CoICT)

DEPARTMENT OF ……..

PRACTICAL TRAINING REPORT

REPORT TITLE: .....

Student Name:	Joseph Cosmas
Reg. No.:	20xx -04-XXXXX
Practical Training Year:	PT1, PT2 or PT3
Company/organization name:	XL Communication Ltd
Training Officer´s Name:	Dr/Mr/Ms……
Academic Supervisor's Name:	Dr/Mr/Ms……

APPENDIX B: PT On-site Supervision Form

ON-SITE SUPERVISOR'S REPORT

UNIVERSITY OF DAR ES SALAAM

COLLEGE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (CoICT)

ACADEMIC YEAR .....

Student's name:..... Reg.#:.....Programme:.....

Company/Organization.....

Physical Location: ..... Tel. No: .....

Company's Contact Person: ..... Position: .....

Training Officer(s).....Position:.....

Name of PT report title: .....

What are present project activities of the company: .....

.....

Student's performance

S/N	DESCRIPTION	Excellent (5)	Very Good (4)	Good (3)	Fair (2)	Poor (1)	Very Poor (0)
1.	Logbook keeping						
2.	Attendance and punctuality						
3.	Daily participation at work						
4.	Social and academic interaction						
5.	Submitted arrival note						
	Subtotal						

$$Total\ Marks = \frac{2 \times \sum(Subtotal)}{5} = ...$$

Special remarks on the student.....

.....

Company's training quality, supervision and facilities

1.	Company's level of engaging students to work	Excellent	Sufficient	Poor
2.	Time students spend with Industrial supervisor			
3.	Relevance of company's activities to student			
4.	Suitability of work station to the PT student			

Special remarks on the company: .....

.....

Name of PT Supervisor: .....

Signature: ..... Date & time of visit: .....

APPENDIX C: PT Report Assessment Form

UNIVERSITY OF DAR ES SALAAM

COLLEGE OF INFORMATION AND COMMUNICATION TECHNOLOGY (CoICT)

PRACTICAL TRAINING ASSESSMENT SHEET

Student´s Name…….. Reg. No…….……PT Year..... (I/II/III)

Internal Examiner´s Name……..….…....Signature..... Academic Year….....

S/N	ASSESSMENT CRITERIA	Max. Mark (%)	Internal Examiner	External Examiner
1	**Training Officer**	**10**		
2	**Student's logbook (Weekly Reports)** - Content relevance (5) - Drawing precision and neatness (5) - Relevance of the tasks/rolls according to a student´s level (year of study) (5) - Overall organization & neatness (5)	**20**		
3	**Academic Supervisor**	**10**		
4	**Written report** **(a) Introduction (The Company/Organization)** - Introduction & Organization chart (5) - Comments on the practice of safety regulations and general welfare (5) - Job description based on professionalism (5) - Outline (description) of recruitment and training policy (5)	**20**		
	(b) The Main Task - Diagrammatic presentation (5) - Problem identification and assumptions made (5) - Choice and justification of the chosen solution (5) - Discussion and comparison of alternative solutions for solving the problem or for improvement (5) - Functional and technical requirements to implement the solution (5) - Conclusion and Recommendations (5) - References (5) - Neatness and precision of writing and drawing (5)	**40**		
GRAND TOTAL (1+2+3+4)		**100**		