ICT SYLLABUS FOR TTCs

OPTION: ECLPE, SME, SSE AND LE

YEAR 1, 2 & 3

© 2022 Rwanda Basic Education Board

All rights reserved

This syllabus is the property of Government of Rwanda.

Credit must be provided to REB when the content is quoted.

FOREWORD

The Rwanda Education Board is honored to avail the ICT Syllabus for Teacher Training Colleges (TTCs). This document serves as official guide to teaching and learning of ICT in TTCs.

The Rwandan education philosophy is to ensure that young people at every level of education achieve their full potential in terms of relevant knowledge, skills and appropriate attitudes that prepare them to be well integrated in society and exploit employment opportunities.

The ambition to develop a knowledge-based society and the growth of regional and global competition in the labour market has necessitated the shift to a competence-based curriculum in TTCs. The TTC curriculum was revised to align it to the CBC in general education to prepare teachers who are competent and confident to implement CBC in preprimary and primary education. The rationale of the changes is to ensure that TTC leavers are qualified for job opportunities and further studies in Higher Education in different programs under education career advancement

I wish to sincerely express my appreciation to the people who contributed towards the development of this document, particularly consultants, REB staff, UR-CE lecturers, TTC tutors, teachers from general education and experts from local and international organizations for their technical support. A word of gratitude goes to the Head-teachers and TTCs principals who availed their staff for various revision activities.

Special appreciation goes to the Development Partners such as UNICEF, USAID/Soma Umenye, Save the Children and Right To Play for their financial support.

Dr. MBARUSHIMANA Nelson

Director General

ACKNOWLEDGEMENTS

I wish to sincerely express my special appreciation to the people who played a major role in the development of ICT syllabus. It would not have been successful without the participation of different education stakeholders. My thanks first go to the leadership of UR-CE who started the review of the TTC curriculum in 2015.

I wish also to thank Rwanda Education Board (REB) leadership who took over and supervised the curriculum review process. I wish to extend my appreciation to Consultants, staff from REB, MINEDUC, Lecturers from UR-CE, TTC principals, TTC Directors of Studies, tutors, teachers from basic Education whose efforts during the revision process were much valuable.

I owe gratitude to different Education Partners more especially UNICEF, USAID/Soma Umenye, which funded TTC curriculum revision, Flemish Association for Development Cooperation and Technical Assistance (VVOB), Right to Play, Help a Child, Save the Children, Aegis Trust, Humanity and Inclusion, Teach Rwanda, Educate! and IEE for their technical support.

Joan Murungi,
Head of Curriculum, Teaching & Learning Resources Department

Contents

FOREWORD ..... **iii**

ACKNOWLEDGEMENTS ..... **iv**

1. GENERAL INTRODUCTION **1**

1.1 Rwanda Education Sector Objectives 1

1.2. Level Competences of Pre-primary and Primary Teacher Education in the Republic of Rwanda 2

1.3 Background to curriculum review 2

1.4 Rationale of teaching and learning ICT 3

1.4.1 ICT and society 3

1.4.2 ICT and student teacher 3

1.5. Professional standards and competences 4

1.5.1. Competences 4

1.5.2 Teaching Professional standards 4

1.5.3 Broad ICT competences 6

1.5.4. ICT and developing competences 6

2. PEDAGOGICAL APPROACH **7**

2.1 Role of the student teacher 7

2.2. Role of the tutor 8

2.3. Special needs education and inclusive education approach 9

2.4. Skills lab pedagogy 9

3. ASSESSMENT APPROACH....11
3.1. Types of assessments....11
3.1.1. Formative assessment: 11
3.1.2. Summative assessments:....12
3.2. Record keeping....12
3.3. Item writing in summative assessment....12
4. RESOURCES....14
4.1. Materials needed for implementation....14
4.2. Human resource....15
5. SYLLABUS UNITS....16
5.1. ICT STLLABUS FOR Year One....16
5.1.1. Key competences at the end of Year One....16
5.1.2 Syllabus units for Year One....17
5.2. ICT SYLLABUS FOR Year Two....25
5.2.1 Key unit competence at the end of Year Two....25
5.3. Subject syllabus for Year Three....30
5.3.1. Key unit competence at the end of Year Two....30
5.3.2 ICT units for Year Three....31
6. REFERENCE....33
7. ANNEXES....34
7.1. TTC Subjects and weekly time allocation....34
7.2. Overview of ICT syllabus....36

1. GENERAL INTRODUCTION

1.1 Rwanda Education Sector Objectives

The Education Sector objectives are the reference point for the inclusion of education issues into other Rwandan policy documents. These objectives are aligned with those recommended in the Eastern African Curriculum Framework proposals. The Government of Rwanda through law number 36/2018 of 29th June, 2018 determining the organization of education revised the objectives of the sector. They are to:

- Provide Rwandans with adequate skills at all levels of general, professional, as well as technical and vocational education;
- Offer quality courses and education at all levels;
- Promote science, technology and research in order to equip many Rwandans with capacity to speed up national development;
- Promote the culture of peace, tolerance, justice, respect for human rights, solidarity, democracy and that of avoiding any form of discrimination or favoritism;
- Provide each Rwandan with an integrated education based on ethical values, science and social welfare and directed towards building a nation to ensure its sustainable development
- Instill into Rwandans the love of a job well done, the value of hard work, punctuality and promotion of competence
- Train the Rwandan to have freedom of thought, be innovative, have abilities to acquire and be analytical towards other people's opinions and to communicate his or her own ideas, to be patriotic and encourage him or her to be updated on the situation prevailing elsewhere;
- Eliminate all grounds and obstacles that hinder the development of girls and women education as well as of any other groups that need special attention.

These objectives and associated strategies are the backbone for developments in education including the curriculum and assessment policy and the curriculum framework.

1.2. Level Competences of Pre-primary and Primary Teacher Education in the Republic of Rwanda

As stated earlier, Pre-primary and Primary Teacher Education is under the responsibility of Rwanda Education Board. The following are the competences of Teacher Education. By the time a student teacher is exiting the college after three years he or she should:

- Be a qualified teacher who can compete not only locally but regionally and internationally;
- Have professional ethics and develop an inquiring mind for innovative education;
- Be prepared adequately for efficiency in education, administration, management, evaluation and measurement;
- Be competent, reliable, honest and responsible.
- Be equipped with potentials that enable him/her to explore the learners' abilities and interests
- Be able to develop the child's ability in critical thinking, free expression and ideas.

1.3 Background to curriculum review

The ICT syllabus is developed for TTC student teachers in all options in Year 1, 2 and three.

The motive of developing the syllabus was to ensure that itis responsive to the needs of the student teacher, the content she/he will provide to primary school pupilsand to shift from objective and knowledge-based learning to competence-based learning. Another reason was to align the draft TTC curriculum to the CBC in general education. Emphasis in this development was put more on skills and competences as well as the coherence within the existing content by drawing on the previous syllabus and benchmarking with syllabi elsewhere with best practices.

The ICT syllabus guides the interaction between the tutor and student teachers in the learning processes and highlights the competences a student teacher should acquire during and at the end of each unit of learning. Student teachers will have the opportunity to apply ICT in different contexts, and see its importance in daily life. Tutors help the student teachers appreciate the relevance and benefits for studying ICT.

The learning of student teacher is influenced by many factors such as curriculum relevancy, necessary and sufficient pedagogical approach by tutors, assessment strategies and sufficient instructional materials. With the review of the ICT syllabus, these factors have been aligned with the competence-based curriculum for general education. This will lead to having qualified and competent teachers who are ready to implement the competence based curriculum for preprimary and primary education.

This implies equipping student teachers with relevant knowledge, skills, attitude and values necessary to make them competitive on local, regional and global job market. This revised syllabus will allow future teachers to contribute to the development of equity and quality education at preprimary and primary levels and then it will enable them to go for further studies.

1.4 Rationale of teaching and learning ICT

In Rwanda, ICT is penetrating every aspect of every day's life including service delivery and the country is going towards an intensive integration of ICT in education,which is a key player in the development of a country. ICT in education is to be used to enhance teaching and learning and prepare citizens who will adapt in this newly created environment. Student teachers in TTC options have therefore a sound reason to study ICT advanced topics namely word processing, spreadsheet, internet, computer graphics and database asthey will develop in them inspiration and abilities to use ICT as a tool when they will be facilitating in primary school. This will ultimately allow student teachers and their future pupils to actively participate in a world of communication, research and innovation for social and economic transformation

1.4.1 ICT and society

Information and Communication Technology (ICT) is a diverse set of tools and resources used to communicate, create, disseminate, store and manage information. In Rwanda, Information and communication technology (ICT) has the purpose "to transform the Rwandan citizen into skilled human capital for the socio-economic development of the country by ensuring equitable access to quality education focusing on combating illiteracy, promotion of science and technology, critical thinking, and positive values. In Rwandan society, ICT is also the foundation for long term, sustainable and efficient government services, communication, economic development, financial transactions. ICT provides huge content and competence based methodologies which will allow student teachers to conduct primary school lessons with excellent package. Those well delivered lessons will develop in pupils' competences which will have an impact on the society in general.

1.4.2 ICT and student teacher

ICT as a subject empowers student teacher with a package of skills and exposes them to common application software such as word processing, spreadsheets and presentations, database, internet, which will develop in them inspiration and abilities to use ICT as a tool when they will be facilitating in primary school. This will ultimately allow student teachers and their future pupils to actively participate in a world of communication, research and innovation for social and economic transformation.

1.5. Professional standards and competences

1.5.1. Competences

Competence is defined as the ability to perform a particular task successfully, resulting from having gained an appropriate combination of knowledge, skills, attitudes and values. The present syllabus gives the opportunity to student teachers to develop different broad ICT competences as well as the generic competences.

Broad subject competences are highlighted and broken into key competences for each year, these are further broken into key unit competences which are finally split into learning objectives (knowledge, skills, attitudes and values) in every learning unit.

Taking into account the rationale behind the overall TTC curriculum review as well as the parameters and constraints of the local context, student teachers will be equipped with professional and generic competences reflected in five core standards: the teacher as an educator, the teacher as a subject expert, the teacher as a communicator and connector with student teachers, the school community and the society, the teacher as a guide, an organizer and a facilitator of the learning process and learning environment, and the teacher as an innovator and researcher. For student teachers, professional standards are acquired through generic competences and professional practices that are emphasized and reflected on in the learning process. The ICT tutors will ensure that student teachers are exposed to tasks that help them acquire these competences.

1.5.2 Teaching Professional standards

These refer to the characteristics that all teachers globally should have. All teachers in Rwanda should have the six characteristics listed below:

1. The teacher has knowledge of CBC and how to implement it.

The teacher has understanding of CBC and how it works. He/she has knowledge of basic and generic competences and is able to integrate the cross cutting issues within and across subject area.

2. The teacher as an educator

The professional teacher enhances and stimulates cognitive, social-emotional, physical and moral development of the children.

S/he therefore has a thorough understanding of the learner's background, interests, motivations and problems and can adjust his/her actions and the learning environment to the different needs of the student teachers. A competent educator is a role model, showing desired behavior and values. He/she guides and coaches pupils to become social, self-confident, independent, responsible, open-minded and innovative people and acts as their role model. In order to be educator, the student teacher must be supported in developing cooperation, inter personal and life skills.

3. The teacher as subject expert

The teacher as a subject expert knows and uses appropriate methods/techniques to assess student teachers and give constructive feedback to the whole class. He/ she is able to link the contents of subjects and connect them with real life situation. This enables thestudent teacher to acquire critical and problem solving skills as well as concepts and skills enabling him/her to pursue tertiary education.

4. The teacher as a communicator

The professional teacher displays a good example in his/her way of expressing him/herself, stimulates and enhances positive and clear communication between him/herself and learners, between learners themselves, the school community and the wide society. A good communicator is open-minded and respects diversity within and around the school. This requires teachers to communicate in official languages.

5. The teacher as a guide and an organizer

The professional teacher/tutor facilitates the holistic development of all student teachers, taking into account the differences between them. He/she ensures that the learning environment: class, computer lab, etc., is well maintained and conducive for children's learning outcomes. This requires a teacher to be equipped with managerial skills.

6. The teacher as an innovator, researcher and reflective practitioner

The professional teacher looks for ways to improve his/her teaching, and the wellbeing and results of his/her learners. He/she is a reflective practitioner and knows how to perform small-scale reflective action.

The acquisition of such skills will require student teacher to update knowledge and skills with minimum external support and to cope with evolution of knowledge advances for personal fulfillment in areas that need improvement and development, thus becoming lifelong learners.

1.5.3 Broad ICT competences

During and at the end of the three years, the student teacher should be able to:

- Apply acquired technological skills for smooth working in ICT integrated environment and develop materials to address the society needs
- Act as a role model in taking care of computers in the school environment or any other location and demonstrate ethical use of ICT tools
- Develop critical thinking and logical reasoning through computer web designing as to come up with possible solutions in order to address different issues related to service delivery in the country and the region
- Apply acquired technical knowledge, skills and attitudes in teaching and learning process and manage information efficiently, effectively and appropriately so as to create solutions to information problems using a range of application software
- Locate and access information and verify its integrity when investigating questions, topics or problems.

1.5.4. ICT and developing competences

The national policy documents based on national aspirations identify some 'basic competences' alongside the 'generic competences' that will develop higher order thinking skills and help student teacher learn subject content and promote application of acquired knowledge, skills, attitudes and values.

Through observations, applying ICT skills,and presentation of information acquired during the learning process, the student teacher will not only develop different ICT skills but also deductive and inductive skills,creativity and innovation skills,cooperation and communication, critical thinking and problem solving skills. This will be realized when student teachers do practice in computer laboratories.

The acquired knowledge, attitude and values while learning ICT should develop a responsible citizen who adapts to scientific reasoning leading to technological change and develops confidence in reasoning independently. The student teacher should show concern of individual attitudes, environmental protection and comply with the scientific method of reasoning. The scientific method should be applied with the necessary rigor, intellectual honesty to promote critical thinking while systematically pursuing the line of thought.

2. PEDAGOGICAL APPROACH

The change to a competence-based curriculum is about transforming learning, ensuring that learning is deep, enjoyable and habit-forming.

2.1 Role of the student teacher

In the competence-based syllabus, the student teacher is the principal actor of his/her education. He/she is not an empty bottle to fill. Taking into account the initial capacities and abilities of the student teacher, the syllabus suggests under each unit, some activities of the student teacher and they all reflect active participation in the learning process.

The teaching/learning processes will be tailored towards creating a student teacher friendly environment basing on the capabilities, needs, experience and interests.

The following are some of the roles or the expectations from the student teachers:

- Student teachers construct the knowledge either individually or in groups in an active way. Therefore, the opportunities should be given to them to use ICT tools.
- Student teachers work on one competence at a time to form concrete units with specific learning objectives (knowledge, skills and attitude).
- Student teachers will be encouraged to do research and present their findings through group work activities.
- A student teachers are cooperative: they work in heterogeneous groups to increase interpersonal management.
- Student teachers are responsible for their own participation and ensure the effectiveness of their work.

2.2. Role of the tutor

In the competence-based syllabus, the tutor is a facilitator, organizer, advisor, a conflict solver,...

The specific duties of the tutor in a competence-based approach are the following:

Tutor is:

- A facilitator, his/her role is to provide opportunities for student teachers to meet problems that interest and challenge them and that, with appropriate effort, they can solve. This requires an elaborated preparation to plan the activities, the place where they will be carried out, and the required assistance;
- An organizer, his/her role is to organize the student teachers in the classroom, the computer laboratory and engage them using participatory and interactive methods through the learning processes as individuals, in pairs or in groups. To ensure that the learning is personalized, active and participative, co-operative, the teacher/tutor must identify the needs of the student teachers, the nature of the learning to be done, and the means to shape learning experiences accordingly;
- An advisor: he/she provides counseling and guidance for student teachers in need. He/she comforts and encourages student teachers by valuing their contributions in the class activities;
- A conflict-solver: most of the activities are performed in groups. The members of a group may have problems such as attribution of tasks; they should find useful and constructive the intervention of the teacher as a unifying element.
- Ethical and preaches by examples by being impartial, a role-model, caring for individual needs, especially for slow student teachers and those with physical impairments, through a special assistance by providing remedial activities or reinforcement activities.
- Ensure the effective contribution of each member, through clear explanation and argumentation to improve the English literacy, to develop sense of responsibility, and to increase the self-confidence and the public speech ability.

2.3. Special needs education and inclusive education approach

All Rwandans have the right to access education regardless of their different needs. This implies that all citizens benefit from the same menu of educational programs. The possibility of this assumption is the focus of special needs education. The critical issue is that we have student teachers who are totally different in their ways of living and learning as opposed to the majority. The difference can either be caused by emotional, physical, sensory and intellectual learning challenges.

These student teachers equally have the right to benefit from education in colleges. Therefore, the TTC's role is to enroll them, assess their Special Educational Needs (SEN) and set up suitable strategies and resources to appropriately provide for them. Assessment strategies and conditions should also be adapted to the educational needs of these student-teachers.

Detailed guidance for each category of student teachers with special education needs is provided for in the guidance for teachers. The ICT tutor is advised to work closely with the tutor of Special Need and Inclusive Education to provide appropriate support to any identified student teacher's needs. Information and Communication Technologies (ICT) has the potential to transform special needs children's learning experiences.

2.4. Skills lab pedagogy

"Skills labs", an abbreviation of skills laboratories, refers to specifically equipped practice rooms functioning as training or learning facilities offering students teachers studying sciences opportunities to learn and have ample time to practice what they have learnt either in classroom or laboratory itself.

In order for the student teachers to focus on development of transferable 21st century skills, student teachers should have time to research, experiment and practice what has been taught in small groups or individually in order to enhance the acquisition of competences in each specific unit in the syllabus while carrying out tasks/activities. Through these activities student teachers acquire knowledge, skills and values which they can demonstrate and apply.

ICT is a hands on subject where student teachers are usually required to spend some time in the computer laboratory and perform activities depending on the exact field, unit /lesson they are in.

Each unit in the syllabus has assessment activities that provides opportunity to learners to integrate required resources in developing (knowledge, skills, attitudes and values) acquired during the unit, previous units within the subject and other subjects to make learning more practical and relevant. These assessment activities are suggested at the end of units to ensure practical application of the competencies

acquired during learning and tutors are requested also to create other relevant activities taking into consideration the school environment.

During Skills lab activities, student teachers are requested to be creative and innovative, apply theories, hypothesis, and laws and test them. Students should be able to construct, practice and present. Tutors should monitor student teachers performance and offer guidance in practical aspects. The work done by student teachers is presented and constructive feedback provided in a course of time.

3. ASSESSMENT APPROACH

Assessment is the process of evaluating the teaching/learning processes through collecting and interpreting evidence of individual student teacher's progress in learning and to make a judgment about a student teacher's achievements measured against defined standards. Assessment is an integral part of the teaching/learning process. In the new competence-based curriculum, assessment must also be competence-based; whereby a student teacher is given a complex situation related to his/her everyday' s life and asked to try to overcome the situation by applying what he/she learned.

3.1. Types of assessments

There are two major types of assessment namely formative and summative assessments. Any form of assessment should reflect the three domains of learning, which are Cognitive, Psychomotor and Affective

- **Knowledge and understanding:** Does the student teacher demonstrate an understanding of the ICT concept? Has the student teacher mastered the ICT concepts? Indicators: correctness of answers, coherence of ideas, logical reasoning,
- **Practical skills:** How does the student teacher perform on aptitude and practical tests? Indicators: typing skills, ease in text manipulation, capability of software installation, speed and efficiency in using a computer
- **Attitude and values:** How does the student teacher respond to a task or a situation? What is the student teacher's behavior vis-a-vis computer use? How ethically does he/she use it?

3.1.1. Formative assessment:

Formative assessment helps to check the efficiency of the process of learning. It is done within the teaching/learning process.

Continuous assessment involves formal and informal methods used by schools to check whether learning is taking place. When a tutor is planning his/her lesson, he/she should establish criteria for performance and behavior changes at the beginning of a lesson. Then, at the end of every unit, the tutor should ensure that all the student teachers have mastered the specified key unit competences basing on the predefined criteria, before going to the next unit. The tutor will assess how well each student teacher masters both the subject and the generic competences described in the syllabus as well as the professional practices. From this, the tutor will gain a picture of the all-round progress of the student teacher. The tutor will use one or a combination of the following techniques: observation, pen and paper, and oral questioning and practice using computers

3.1.2. Summative assessments:

When assessment is used to record a judgment of a competence or performance of the student teacher, it serves a summative purpose. Summative assessment gives a picture of a student teacher's competence or progress at any specific moment. The main purpose of summative assessment is to evaluate whether competences have been achieved and to use the results for ranking or grading of student teachers, for deciding on progression, for selection into the next level of education and for certification. This assessment should have an integrative aspect whereby a student must be able to show mastery of all competences. It can be internal school based assessment or external assessment in the form of national examinations. College based summative assessment should take place once at the end of each term and once at the end of the year. College summative assessment average scores for each subject will be weighted and included in the final national examinations grade. The national examinations will be done at the end of year 3 for certificate award. College based assessment average grade will contribute a certain percentage to be determined by the institution in charge of national examination.

3.2. Record keeping

This is gathering facts and evidence from assessment instruments and using them to judge the student's performance by assigning an indicator against the set criteria or standard. Whatever assessment procedures used generate data in the form of scores which will be carefully recorded and stored in a portfolio. The latter is used in deciding remedial actions, alternative instructional strategy and as well as feed back to the student teacher. The records also are important to parents to check the learning progress and to advise accordingly. Finally, the records are very essential to the final assessment of professional practice of the student teacher at the end of the college.

This portfolio is a folder (or binder or even a digital collection) containing the student teacher's work as well as the student teacher's evaluation of the strengths and weaknesses of the work. Portfolios reflect not only work produced (such as papers and assignments), but also it is a record of the activities undertaken over time as part of student learning. Besides, it will serve as a verification tool for each student teacher that he/she attended the whole learning before he/she undergoes the summative assessment for the subject.

3.3. Item writing in summative assessment

Before developing a question paper, a plan or specification of what is to be tested or examined must be elaborated to show the units or topics to be tested on, the number of questions in each level of revised Bloom's taxonomy and the marks allocation for each question. In a competence-based curriculum, questions from higher levels of Bloom's taxonomy should be given more weight than those from knowledge and comprehension level.

Before developing a question paper, the item writer must ensure that the test or examination questions are tailored towards competence based assessment by doing the following:

- Identify topic areas to be tested from the subject syllabus.
- Outline subject-matter content to be considered as the basis for the test.
- Identify learning outcomes to be measured by the test.
- Prepare a table of specifications.
- Ensure that the verbs used in the formulation of questions do not require memorization or recall answers only but also testing broad, subject and generic competences as stated in the syllabus.

4. RESOURCES

4.1. Materials needed for implementation

The successful implementation of this ICT syllabus will require learners to have computers which are the standard equipment for this subject. Alongside computers, other ICT tools and application software have been identified and it is indicated in this syllabus where they will be needed. Various resources for the implementation of the ICT competence based curriculum are the following:

- **Computer laboratory:** each learner works on a computer. Laptops are highly recommended where possible
- **Printer and scanner:** needed when there are some documents to print or to scan
- P**rojectors:** Presentation is a key element of the competence based curriculum where learners work. Teaching materials will be mostly displayed using a projector for ICT subject in order to assist teaching/learning
- **Teacher's laptop:** Teachers need to prepare learning and teaching materials and organize content so as to use the classroom time effectively.
- **Internet connectivity:** research in the competence based teaching/learning approach is necessary and this can be done using books but also computers with internet connectivity
- **Software:** in most cases skills expected from this competence based curriculum do not rely on any version of operating system or application software. However, the latest version of most software at the time of implementation will be used. Some of the needed software are:
    - **Operating system:** licensed copy of the most recent Windows Operating System
    - Word processing, spreadsheets and presentation software:
    - **Graphics and multimedia:** digital camera, Photoshop, Microsoft Picture Manager, and Movie Maker.
    - **Browsers:** Chrome, Mozilla Firefox, internet explorer, and Opera, Microsoft edge.
- For teaching financial transactions related topics the needed materials are:
    - **ATM:** ATM Simulators for experimenting with the process of accessing, depositing and checking balances of an account using a debit/credit card. Organized visit is recommended if any ATM device is near to the school.
    - Telephones for mobile banking and managing money.
    - Billing machine or related simulators.

- Textbooks and supplementary reading materials

Where the teacher is not familiar with the needed software and tools, it is recommended that he/shelearns before using them in order to save time while teaching. Also, the listed software don't replace the role of the teacher.

4.2. Human resource

The effective implementation of this curriculum needs a joint collaboration of educators at all levels. Given the material requirements, tutors are expected to accomplish their noble role as stated above. The staff in charge of education at District and sector level should ensure overall support to TTCs for a successful implementation. On the other hand, TTC Principals and TTC Deputy Principals are required to make a close follow-up and assess the teaching/learning of this subject due to their profiles in the schools. These combined efforts will ensure bright future careers and lives for student teachers as well as the contemporary development of the country.

In a special way, the tutor of ICT at TTC level should have a firm understanding of ICT concepts and pedagogical content of teaching ICT at primary and secondary levels. He/she should be qualified in ICT related options and have a firm ethical conduct. The tutor should possess the qualities of a good facilitator, organizer, problem solver, listener and adviser. He/she is required to have basic skills and competence of guidance and counseling because students may come to him or her for advice.

The tutor of ICT should have the following skills, values and qualities:

- Inspire student teachers and the community to get devoted to learning and using ICT
- Engage student teachers in a variety of learning activities
- Use multiple teaching and assessment methods
- Adjust instruction to the level of the student teachers
- Have creativity and innovation in the teaching/learning process
- Be a good communicator and organizer
- Be a guide/ facilitator and a counselor
- Make useful link of ICT with other Subjects and real life situations
- Have a good mastery of the ICT Content as well as pedagogical content of teaching ICT
- Have good classroom management skills

5. SYLLABUS UNITS

5.1. ICT STLLABUS FOR Year One

5.1.1. Key competences at the end of Year One

- Describe the role of each component of a computer in the computer system and assemble & disassemble it
- Apply advanced skills to create and format word documents
- Identify different features XO laptop and use them
- Maintain a computer in good working conditions by fixing different hardware issues and installing needed operating system, application and utility (antivirus) software
- Use ethically the internet in carrying out researches aimed at improving knowledge and skills practice
- Apply conditional formatting and filtering and integrate spreadsheet to other applications

5.1.2 Syllabus units for Year One

<table>
<tr><td colspan="2">Subject: ICT</td><td colspan="2">Year :1</td><td>Options : ECLPE, SME, LE,, SSE</td></tr>
<tr><td colspan="2">TOPIC AREA: Using XO laptop</td><td colspan="3">Sub Topic: Introduction to XO laptops</td></tr>
<tr><td colspan="4">Unit 1: introduction to XO laptop</td><td>No. of periods: 10</td></tr>
<tr><td colspan="5">Key Unit competence: identify different features XO laptop and use them</td></tr>
<tr><td colspan="3">Learning Objectives</td><td>Content</td><td>Learning Activities</td></tr>
<tr><td>Knowledge and understanding</td><td>Skills</td><td>Attitudes and values</td><td></td><td></td></tr>
<tr><td>• Explain the difference between gnome and sugar interface
• Describe the use of journal
• Identify the elements of abiword window
• Label the elements of Turtle art and scratch window
• Identify the elements of Etoys environment</td><td>•Use the elements of Gnome, Sugar and Abiword interfaces
•Use journal to save, open , rename and send and retrieve a document
•Draw geometric shapes using turtle and scratch window
•Create simple scene, and Stories to animation using scratch window
•Use Etoys environment to create animations</td><td>•Appreciate the use of different interfaces in creating documents
•Express the desire to draw more colourful drawings using turtle and Scratch
•Show creativity for designing and creating more colorful projects reflecting the real life experience</td><td>• The keyboard keys and touchpad
• Brief introduction to different interfaces:
- Sugar interface
- Gnome interface
- Abiword window:
Use of the Journal
• Programming for children
Turtle:
- Elements of turtle art window
- Turtle main instructions (Forward, back, left, right, arc, clean)</td><td>• Individually student teachers name, open and close using Sugar, Gnome and Abiword interfaces
• Individual exercises on renaming and deleting a document in the Journal
• Practice drawing shapes and calculating their area
• In groups student teacher create projects involving animations using Scratch and Etoy</td></tr>
</table>

			Scratch window: - **Object animations** - **Drawing geometric shapes and Arithmetic operations** Speeches, organization, background setting(paint, import, camera), sound • **Etoys Projects:** Save, open, delete, rename, create animations	
Assessment criteria: Student teacher can use Sugar, Scratch and Abiword interfaces				
Links to other Subjects: *Mathematics when drawing shapes and Fine Art when beautifying their creations.*				
Materials: *XO laptops, Books*				

Subject: ICT			Year:1	Options : ECLPE, SME, LE, SSE
TOPIC AREA: COMPUTER MAINTENANCE		**Sub Topic**: Computer components and troubleshooting		
Unit 2: Computer maintenance			**No. of periods: 18**	
Key Unit competence: To be able: To assemble and disassemble a computer, Identify hardware issues and fix them, Install software				
Learning Objectives			**Content**	**Learning Activities**
Knowledge and understanding	**Skills**	**Attitudes and values**		
• Describe elements of the computer system unit and their roles • Discuss computer maintenance principles • Recognize and explain computer hardware issues • Identify software installation principles • Identify software issues • Explain different steps for Windows OS installation • Explain different steps to install an application software	• Evaluate the capacity of processor, RAM and HDD • Apply computer maintenance principles to ensure it is in good working condition • Apply diagnostic principles to identify computer hardware issues • Format and install an Operating System	• Appreciate the role and function of elements of the computer system unit • Show awareness of the behaviors to have before and during computer maintenance • Develop a behavior to scan every external memory connected to a computer before using it	**HARDWARE:** **Elements of the computer system unit and their roles:** Power supply, Video card, Hard disk, Mother board, CPU, RAM • Computer maintenance principles • Computer capacity o Storage size (bit, byte,…) o Processing speed • Identifying and addressing hardware issues • Assembling a computer • Disassembling a computer **SOFTWARE:** • Software installation principles	• Work in groups to discuss about elements of the computer system unit and their role. Present findings to the class • In groups and with the guidance of the teacher, student teachers open computer system unit, disconnect each element from its place and reconnect it. • In groups and guided by the teacher students identify different hardware issues and fix them • Student teachers work in groups to brainstorm about software issues and present findings to the class • Guided by the teacher, in groups student teachers format a computer, install OS and other applications such Ms. office, anti-virus, etc. Each student teacher takes turn.

	• Install different computer applications Apply diagnostic principles to identify software issues	Acquire a behavior to install software for which one knows the origin	• **Computer software issues:** ○ OS issues ○ Applications issues ○ Viruses **Computer software installation** ○ Installation of an OS Installation of an Application software	• At the end of the formatting lesson, student teachers identify steps to install OS and the importance of each
Assessment criteria: Learners can successfully assemble and disassemble a computer and install software				
***Links to other Subjects*:** English: gain new vocabulary in English; Mathematics: by doing measurements of the computer capacity				
Materials: Computers, Projector, Tools box for computer maintenance, screen projector				

Subject: ICT	Year: 1	Options : ECLPE, SME, LE, SSE
TOPIC AREA: APPLICATION SOFTWARE	**Sub Topic: Word Processing**	
Unit 3: Advanced word processing	**No. of periods: 16**	
Key Unit competence: Apply advanced skills to create suitable word documents		

Learning outcomes			Content	Learning Activities
Knowledge and understanding	**Skills**	**Attitudes and values**		
• Describe different way of formatting a text • State the steps of creating and updating a table of content, referencing, and protecting a document	• Apply different methods to format a text of a word document • Create and insert footnotes and endnotes • Create and update a table of content • Make page set up by putting margin, page orientation and column • Practice the way of protecting documents from unauthorized changes and authorize reviewer to insert comment and tracked changes only	• Show interest in creating good looking word documents • Show concern to care for documents so as to protect them from unauthorized access	• Formatting a document o Change the font • **Paragraph group** (Indent, spacing, bullets, numbering, alignment) **Referencing a word document:** • Header and footer • Creating and inserting footnotes and endnotes • Converting footnotes to endnotes • Creating and updating a table of contents **Page layout tab command** • Page set up group o Margin o Orientation o Column	• Practical exercises on a given text, format it (bold, italic, underline, color, format painter, font case) and align a paragraph. • Individually and guided by the teacher, student teachers insert header, footer, page numbers and footnotes in a document. • Facilitated by teacher, student teachers create a table of content and update it when they make any change. • Student teachers practice different exercises on page setup and paragraph such as setting the margin, page orientation and column

			Protecting a document from unauthorized changes ▪ Setting a password to open and modify a document ▪ Restricting formatting and editing of a document ▪ Allowing editing in a protected document ▪ Authorizing reviewers to insert comments and tracked changes only ▪ Authorize reviewers to insert comments only ▪ Removing document protection	• With the support of teacher, student teachers practice how to protect a document by putting and removing protective password.
Assessment criteria: Student teachers can apply formatting of text, insert table of content and protect a document.				
Links to other Subjects: English: presentation of extended writing, punctuation and spelling.				
Materials: Computers, projector, soft documents, text books, and the internet				

<table>
<tr><td colspan="2">Subject :ICT</td><td colspan="2">Year : 1</td><td>Options : ECLPE, SME, LE, SSE</td></tr>
<tr><td colspan="2">TOPIC AREA : Application Software</td><td colspan="3">Sub Topic : Spreadsheet</td></tr>
<tr><td colspan="4">Unit 4: Advanced Spreadsheet I</td><td>No. of periods: 10</td></tr>
<tr><td colspan="5">Key Unit competence: Apply conditional formatting and filtering and integrate spreadsheet to other applications</td></tr>
<tr><td colspan="3">Learning objectives</td><td>Content</td><td>Learning Activities</td></tr>
<tr><td>Knowledge and understanding</td><td>Skills</td><td>Attitudes and values</td><td></td><td></td></tr>
<tr><td>• Explain the use of different advanced excel formula and functions.

• Explain the importance of using chart in excel sheets</td><td>• Apply conditional formatting to cells
• Use filters
• Create, and format charts, labels and axes
• Interpret a chart
• Use Advanced Spreadsheet functions and formula.
• Export data to other applications</td><td>• Show an interest in formatting excel data by using advanced spreadsheet format options.
• Appreciate the role played by advanced spreadsheet options in manipulating excel data in daily life.</td><td>• Conditional Formatting (highlight cell rule, top/bottom rule,...)
• Charts
• Data organization (sorting,filter)
Integrating with other applications
• Exporting data to another file type (pdf, xps, ...)</td><td>• Individually student teacher enter data in excel that they will later use in formatting, and creating charts.
• Individually and with the guidance of the teacher, student teachers format data using conditional formatting, and practice sorting and filtering
• From the file they have already created, student teachers create charts, label them, format axes and interpret them
• Student teachers export data to other applications</td></tr>
<tr><td colspan="5">Assessment criteria: Student teachers can accurately manipulate worksheet data using conditional formatting.</td></tr>
<tr><td colspan="5">Links to other Subjects: Mathematics (Logic and Statistics.)</td></tr>
<tr><td colspan="5">Resources :Computers, Projector and Excel applications</td></tr>
</table>

<table>
<tr><td colspan="2">SUBJECT: ICT</td><td colspan="2">Year :1</td><td>Options : ECLPE, SME, LE,, SSE</td></tr>
<tr><td colspan="2">TOPIC AREA: INTERNET</td><td colspan="3">Sub Topic: INTERNET USE</td></tr>
<tr><td colspan="2">Unit5: Searching the internet</td><td colspan="3">No. of periods: 14</td></tr>
<tr><td colspan="5">Key Unit competence: To be able to ethically use the internet in doing researches</td></tr>
<tr><td colspan="3">Learning objectives</td><td rowspan="2">Content</td><td rowspan="2">Teaching / Learning Activities</td></tr>
<tr><td>Knowledge and understanding</td><td>Skills</td><td>Attitudes and values</td></tr>
<tr><td>• Identify and explain components of URL
• Explain the internet search strategies for better search results</td><td>• Use the internet efficiently and effectively to search for information
• Apply internet search techniques so as to get better search results
• Apply acquired knowledge to request for a service online</td><td>• Show interest in using internet appropriately by respecting all the related ethic principles
• Demonstrate an awareness of copy right issues while searching for resources from the internet
• Show a sense of respect while using online platforms</td><td>• Internet ethics
• Web security(spyware, hacking, firewall)
• URL and its parts (protocol, host name, domain name, sub domain)
• Search on the internet
○ Strategies for better search results:
*Simple search techniques (keyword searching)
*Advanced search techniques (Boolean operators, quotation marks, tilde sign…)
*Searching for documents,books, images, video on the internet
○ Searching by image
○ Browser's Techniques for remembering (Cookies, Bookmark, Cache and Browser history)</td><td>• In groups and after doing a research learners will discuss internet ethics and web security strategies
• Learners will give examples of URL and with the teacher, identify its different parts
• The teacher will give to groups of student research topics that they will do using the internet. After the research the whole class will discuss about the research question they used, the number of search results and any other aspect they realized. In class and using a projector the learners guided by the teacher, do a search using advanced search techniques</td></tr>
<tr><td colspan="5">Assessment criteria: Students can use the internet in doing researches</td></tr>
<tr><td colspan="5">Links to other Subjects: Entrepreneurship (e commerce, online services), Religious studies (for ethical use of internet)</td></tr>
<tr><td colspan="5">Materials: Computers with internet connectivity and internet browsers, Projector, books</td></tr>
</table>

5.2. ICT SYLLABUS FOR Year Two

5.2.1 Key unit competence at the end of Year Two

- Use the full potential of the spreadsheet to manipulate data
- Create a power point presentation to address a bigger audience
- Use graphic tools in capturing and editing images
- Request for online services and access social media.

5.2.2 ICT units for Year Two

<table>
<tr><td colspan="2">Subject :ICT</td><td>Year : 2</td><td colspan="2">Options : ECLPE, SME, LE,, SSE</td></tr>
<tr><td colspan="2">TOPIC AREA : Application Software</td><td colspan="3">Sub Topic : Spreadsheet</td></tr>
<tr><td colspan="4">Unit 1 : Advanced Spreadsheet II</td><td>No. of periods: 20</td></tr>
<tr><td colspan="5">Key Unit competence: Use the full potential of the spreadsheet to manipulate data.</td></tr>
<tr><td colspan="3">Learning objectives</td><td rowspan="2">Content</td><td rowspan="2">Learning Activities</td></tr>
<tr><td>Knowledge and understanding</td><td>Skills</td><td>Attitudes and values</td></tr>
<tr><td>• Explain the use of logical, math, statistical and text functions.
• Recognize the importance of logical, math, statistical and text functions
• Describe the role plated by advanced spreadsheets functions in daily life.</td><td>• Protect and secure a spreadsheet or cells within a spreadsheet
• Use logical, math, statistical and text functions
• Apply spreadsheet security features
• Use functions such as those associated with logical, statistical, financial and mathematical operations.</td><td>• Appreciate the use of logical, math, statistical and text functions.
• Show the interest in protected and unprotected worksheets.
• Conceptualize the advanced spreadsheet functions contribution in real life especially in using excel templates.</td><td>Advanced spreadsheet functions.
Logical (AND, IF, FALSE, NOT, OR)
Math(ABS, ARABIC& ROMAN, BASE, MOD, SQRT)
Statistical (AVERAGE,AVERAGEIF,LARGE,MAXIFS,MEDIAN,MINIF,-MODE)
Text(CHAR, CONCATENATE, ,LOWER,UPPER,)
Using formula & functions from different sheets
Protecting worksheet style, contents and elements
• Protecting & unprotecting worksheet, lock &unlock cells, style, contents and elements from unauthorized user access
• Data validation
• Using other excel templates</td><td>• Individually, using sample data provided by the teacher, student teachers use advanced functions to manipulate the content in cells, protect and unprotect a worksheet
• Student teachers enter validated data in excel
• Individually, student teachers use different spreadsheet templates.</td></tr>
<tr><td colspan="5">Assessment criteria: Student teachers can produce sophisticated reports, to perform complex mathematical and statistical calculations, and to improve productivity using a spreadsheet application.</td></tr>
<tr><td colspan="5">Links to other Subjects: Mathematics: Functions, Equations, Logic, Probability and Statistics. Entrepreneurship: Financial modeling.</td></tr>
<tr><td colspan="5">Resources: Computers, Projector and Excel applications.</td></tr>
</table>

<table>
<tr><td colspan="2">SUBJECT: ICT</td><td colspan="2">Year :2</td><td>Options : ECLPE, SME, LE, SSE</td></tr>
<tr><td colspan="2">TOPIC AREA: APPLICATION SOFTWARE</td><td colspan="3">Sub Topic: power point presentation</td></tr>
<tr><td colspan="3">Unit 2: Advanced power point presentation</td><td colspan="2">No. of periods: 20</td></tr>
<tr><td colspan="5">Key Unit competence: Create a power point presentation to address a bigger audience</td></tr>
<tr><td colspan="3">Learning objectives</td><td rowspan="2">Content</td><td rowspan="2">Learning Activities</td></tr>
<tr><td>Knowledge and understanding</td><td>Skills</td><td>Attitudes and values</td></tr>
<tr><td>• Explain the process of copying, dividing slides into sections
• Discuss the procedure of applying theme, and changing background to slides.
• Explain procedures to add sound, video and animating slides</td><td>• Create a presentation
• Divide presentations into sections
• Apply a background change to all slides
• Add sound and animation to slides
• Insert header& footer and comments to a PowerPoint presentation</td><td>• Appreciate the way of presenting accurately information to a particular audience using presentation</td><td>Create and manage presentations
• Copy slides and content, inserting slides from the outline
• Managing slides (Hide, move, re-arrange, delete, divide slides into sections)
• Apply design themes and format background
• Adding notes and comments
• Insert header and footer
Add sound and animation to slides
• Animate text and pictures in slides
• Customize animation effects
• Add audio and video content to slides
• Add and manage slide transitions (add sound and timing)
Presenting using powerpoint:
• Presenting using a projector
• Print and distributing Handouts</td><td>• On their computers, student teachers practice given exercises related to copy , Divide presentations into sections, Rearrange slides and sections,Apply themes and change slide backgrounds
• Student teachers do practice related to animating text and pictures on slides, customizing animation effects, adding audio and video content to slides and adding & managing slide transitions. Thereafter student teachers print created presentations
• Student teachers presents their created PowerPoint presentation to their peers using a projector</td></tr>
<tr><td colspan="5">Assessment criteria: Student teachers can create, manage a presentation, and add video, chart, and animation to a slide so as to make it attractive to the audience.</td></tr>
<tr><td colspan="5">Links to other Subjects: English: presentation of extended writing, punctuation and spelling., arts and craft, entrepreneurship</td></tr>
<tr><td colspan="5">Materials: Computers, projector, soft documents, text books, and the internet</td></tr>
</table>

Subject: ICT	Year :2	Options : ECLPE, SME, LE, SSE
TOPIC AREA: GRAPHIC DESIGN	**Sub Topic: COMPUTER GRAPHICS**	
Unit 3: Computer Graphics tools	**No. of periods: 16**	
Key Unit competence: to be able to use graphic tools in capturing and editing images		

Learning objectives			**Content**	**Learning Activities**
Knowledge and understanding	**Skills**	**Attitudes and values**		
• Explain different concepts related to computer graphics • Initiate the types of images format • Identify and describe the parts of an image capturing tool such as a camera or a scanner	• Capture images using a digital camera and scanner, and save them to a computer • Manipulate properly images using paint and snipping tool	• Manifest a liking of image manipulation and decoration using paint and snipping tool and show a sense of dignity and integrity in manipulating them.	• Introduction to computer Graphics (Concepts:pixel, morphing, 2D&3D image, raster scan, random scan) • Image format(TIFF, JPEG,GIF, PNG,...) • Image capturing tools o Digital camera *Parts of a digital camera *Using a digital camera (taking pictures and sending them to a computer) o Scanner *Parts of a scanner *Using a scanner • Screenshots capturing o Using the print screen key (PrSc) o Using the snipping tool • Graphics software - Paint o Starting and saving a paint file o Select, Cut, Copy, Paste, Crop o Paint tools (pencil, Fill color, Text, Eraser, Color picker, Magnifier) o Insertion of shapes	• Student teachers do research in the library or using the internet in order to find meanings to some computer graphics concepts and image format • Through groups and after doing a research, the teacher provides a camera /scanner and student teachers identify the parts of each. Thereafter these devices are used to capture/scan images that they will transfer to a computer. • Student teachers take screenshots of their computers using the PrSc key or the snipping tool, save them in different format. • Student teachers copy images captured using cameras or scanners, PrSC key and snipping tool and manipulate them in Paint.

Assessment criteria: Student teachers can use graphic tools such as digital camera, scanner and snipping tool and can manipulate images properly.

Links to other Subjects: Physics (Optics- parts of a digital camera), Fine arts and craft

Materials: Computers, digital camera and scanner, projector

<table>
<tr><td colspan="3">SUBJECT: ICT</td><td>Year :2</td><td>Options : ECLPE, SME, LE,, SSE</td></tr>
<tr><td colspan="2">TOPIC AREA: INTERNET</td><td colspan="3">Sub Topic: INTERNET USE</td></tr>
<tr><td colspan="3">Unit 4: E commerce, social media and online services</td><td colspan="2">No. of periods: 14</td></tr>
<tr><td colspan="5">Key Unit competence: to be able to request for online services and access social media.</td></tr>
<tr><td colspan="3">Learning objectives</td><td rowspan="2">Content</td><td rowspan="2">Teaching / Learning Activities</td></tr>
<tr><td>Knowledge and understanding</td><td>Skills</td><td>Attitudes and values</td></tr>
<tr><td>• Discuss the advantages of using e commerce and online services compared to traditional ways of commerce and service
• Discuss the importance of social media in daily life</td><td>• Apply acquired knowledge to request for a service online
• Create accounts on social media</td><td>• Show a sense of respect while using online platforms</td><td>• E commerce
o Understanding e commerce (history, advantages vs. disadvantages)
o E commerce models (Business to Customer, Business to Business,...)
o Payment methods
• Social media (facebook, twitter, instagram, WhatsApp)
• Online Services
o E Banking
o E payment (credit card, Mobile Money,)
o Local online services (irembo)</td><td>• Guided by the teacher learners visit and explore one e commerce site, social media site and an online service provider web application (irembo). After this, each topic is discussed as shown in the content.
• On the guidance of the teacher, student teachers create social media accounts</td></tr>
<tr><td colspan="5">Assessment criteria: Students can use the internet in doing researches and visiting online service provider websites</td></tr>
<tr><td colspan="5">Links to other Subjects: Entrepreneurship (e commerce, online services), Religious studies (for ethical use of internet)</td></tr>
<tr><td colspan="5">Materials: Computers with internet connectivity and internet browsers, Projector, books</td></tr>
</table>

5.3. Subject syllabus for Year Three

5.3.1. Key unit competence at the end of Year Two

- To create, manipulate and query an access database
- Create a static website using HTML

5.3.2 ICT units for Year Three

<table>
<tr><td colspan="2">Subject: ICT</td><td colspan="2">Year :3</td><td>Options : ECLPE, SME, LE,, SSE</td></tr>
<tr><td colspan="2">TOPIC AREA: APPLICATION SOFTWARE</td><td colspan="3">Sub Topic: Database</td></tr>
<tr><td colspan="4">Unit 1: Database creation and manipulation</td><td>No. of periods: 24</td></tr>
<tr><td colspan="5">Key Unit competence: To create, manipulate and query an access database</td></tr>
<tr><td colspan="3">Learning Objectives</td><td rowspan="2">Content</td><td rowspan="2">Learning Activities</td></tr>
<tr><td>Knowledge and understanding</td><td>Skills</td><td>Attitudes and values</td></tr>
<tr><td>• Explain the importance of using a database in daily life
• Distinguish the key terms used in database
• Explain the advantages for using queries view in the database
• Differentiate primary key from foreign key created to link tables</td><td>• Create a database with tables having primary keys and foreign keys
• Create view reports from created database
• Use queries views to display a certain needed part of information from the database
• Interpret different reports generated from the database</td><td>• Appreciate reports generated from the database</td><td>Key terms used in Database
o Relational Database
o Database Management System (DBMS)
o Primary Key
o Foreign Key
o Composite key
o Structured Query Language (SQL)
o NoSQL
Data type
Opening, saving and closing a database
Create a blank database
Creating a table
o Table Design View
o Creating fields
o Adding Data
o Creation of table relationship (primary key, foreign key)
o Querying a Database in design view
*Query Criteria</td><td>With guidance from the tutor, students teachers create a database with tables, retrieve some data from the database and generate a report</td></tr>
<tr><td colspan="5">Assessment criteria: Student teacher can successfully create a database with tables, create relationship between tables, query and retrieve data from the database.</td></tr>
<tr><td colspan="5">Links to other Subjects: English: gain new vocabulary in English, Mathematics when entering some numbers and performing some calculations using queries.</td></tr>
<tr><td colspan="5">Materials: Computers, Ms Access installed in the computer</td></tr>
</table>

<table>
<tr><td colspan="3">Subject: ICT</td><td>Year: 3</td></tr>
<tr><td colspan="2">TOPIC AREA: INTERNET</td><td colspan="2">Sub Topic : Web designing</td></tr>
<tr><td colspan="3">Unit 2: introduction to web designing</td><td>No. of periods: 22</td></tr>
<tr><td colspan="4">Key Unit competence: Create a static website using HTML</td></tr>
<tr><td colspan="3">Learning outcomes</td><td rowspan="2">Content</td><td rowspan="2">Learning Activities</td></tr>
<tr><td>Knowledge and understanding</td><td>Skills</td><td>Attitudes and values</td></tr>
<tr><td>• Explain the difference between website, web page, web application
• Explain the use and importance of Dynamic web page and static web page</td><td>• Differentiate dynamic web page from static web page
• Use HTML tags to create a static web page</td><td>Appreciate the use of different tags used to create a web page

Have an awareness of not visiting the web sites that can harm and influence them negatively</td><td>Introduction to web designing
Key terms: Website, Web page, Web application, Static web page, Dynamic web page
Introduction to HTML
• Importance of using both static web page and dynamic web page
• Design a static web page using html tags and hyperlinks
o Tags that identify and name documents
o Tags that organize web page contents
• Creation of links
Website creation project: information gathering, planning, design, development, testing and delivery, maintenance</td><td>• In groups student-teachers discuss the difference between website, webpage, web application and list the most popular web sites they know which cannot harm and influence them negatively.
• Student teachers create hyperlinks
• Student-teachers describe and use HTML tags to design a web page
• Individually student-teacher create a website using HTML codes
• In groups student teachers create website projects and present them</td></tr>
<tr><td colspan="4">Assessment criteria:Learners can create a static web site and differentiate it from a dynamic web site</td></tr>
<tr><td colspan="4">Links to other Subjects: internet</td></tr>
<tr><td colspan="4">Materials: Computers, projector, text books, Notepad</td></tr>
</table>

6. REFERENCE

1. Ministry of Youth and ICT- Rwanda,(2015,) Smart Rwanda 2020 Master Plan, Kigali
2. Rwanda Education Board (REB), (2015), Computer Science Competence Based Syllabus For Combinations (CEM, MPC), (2015), Kigali
3. Rwanda Education Board (REB), (2015), Ict Syllabus for Lower Secondary, (2015), Kigali
4. University of Rwanda, College of Education, (2017), Curriculum Framework for Teacher Training College Experimental version 2017, DW LTD
5. National Curriculum Development Centre(NCDC), (2010), Computer Science Curriculum for Computer Science Economics And Mathematics Option & Mathematics Physics And Computer Science Option, Kigali, Rwanda
6. University of Rwanda, College of Education, (2011), Teacher Training Colleges (TTC) ICT Curriculum- Options: Science and Mathematics Education; Languages Education; Social Studies Education; and Early Childhood Education, NCDC, Kigali
7. UNESCO.ORG/using_icts_to_benefit_special_needs_students

7. ANNEXES

7.1. TTC Subjects and weekly time allocation

SN	Subject	Number of Periods								Number of Syllabi
		ECLPE		SSE		SME		LE		
		Y1	Y2&3	Y1	Y2&3	Y1	Y2&3	Y1	Y2&3	
1	Foundations of Education	6	6	6	5	6	5	6	5	1
2	English	5	5	5	4	5	4	7	7	3
3	Kinyarwanda	5	5	2	2	2	2	5	6	3
4	Mathematics	3	3	3	3	6	6	2	2	3
5	Integrated Science	4	4	1	1	11	0	1	1	3
6	Physics	0	0	0	0	0	5	0	0	1
7	Biology	0	0	0	0	0	5	0	0	1
8	Chemistry	0	0	0	0	0	5	0	0	1
9	Social Studies	4	4	11	0	2	2	2	2	3
10	History	0	0	0	5	0	0	0	0	1
11	Geography	0	0	0	5	0	0	0	0	1
12	Economics	0	0	0	5	0	0	0	0	1
13	Creative Performance (Music and Fine Arts)	4	4	4	4	2	2	4	4	2
14	Physical Education	1	1	2	1	1	1	1	1	1
15	Entrepreneurship	2	2	2	2	2	2	2	2	1
16	ICT	2	2	2	2	2	2	2	2	1

17	TMP	7	7	4	4	6	4	4	4	11
18	SNE	2	2	2	2	2	2	2	2	1
19	Religious Education	1	1	4	3	1	1	1	1	2
20	French	4	4	2	2	2	2	7	7	3
21	Kiswahili	1	1	1	1	1	1	5	5	2
22	Co-Curricular	1	1	1	1	1	1	1	1	0
23	Individual Study	8	8	8	8	8	8	8	8	0
24	School Attachment	Year 3 (First term)								
	TOTAL	60	60	60	60	60	60	60	60	46

7.2. Overview of ICT syllabus

TOPIC AREA	SUBTOPIC AREA	KEY COMPETENCES		
		YEAR I	YEAR II	YEAR III
XO Laptop	**Introduction to XO laptops**	Identify different features of XO laptops and use them		
COMPUTER MAINTE-NANCE	**Computer maintenance**	* Identify and describe elements of the computer box and their roles *Evaluate the capacities of processor and RAM for required computer capabilities *Apply computer maintenance principles to ensure it is in good working condition *Apply diagnostics principles to identify computer issues and Install computer software		
ADVANCED OFFICE	**Advanced Word processing**	*Apply advanced skills and concepts to create suitable word documents		
	Advanced Spread-sheet	*Demonstrate the ability to use advanced features and functions of spreadsheet tools to record and analyze data	Apply appropriate techniques in formatting, manipulating and protecting of data	
	Power Point presentation		Create a power point pre-sentation and appreciate its importance in addressing a bigger audience Demonstrate the way of Inserting movies, audio and screen recording in slide presentations	

	Database			*Identify how databases work and how they are implemented in business and organizations *Collect and organize data to manipulate reports, and queries *Appreciate the importance of having a computerized database
GRAPHIC DESIGN	**Computer graphics**		Use graphic tools in capturing and editing images	
INTERNET	**Web designing**			*Design static web pages *Discuss the difference between static and dynamic web pages
	Internet use	*Use the internet efficiently and effectively	*Exhibit awareness of electronic commerce and apply it in every daily life	