

TUTOR PROFESSIONAL DEVELOPMENT HANDBOOK: B.Ed in Initial Teacher Education ICT Year 4

HANDBOOK FOR TUTORS





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**TUTOR PROFESSIONAL
DEVELOPMENT
HANDBOOK: B.Ed in Initial
Teacher Education
ICT Year 4**

Tutor Version

Foreword to the Year 4 Tutor Professional Development Handbook

The development of this set of Tutor Professional Development Handbooks, for Year 4 Bachelor of Education (B.Ed.) courses in Initial Teacher Education marks both an end and a beginning.

It marks an end in that this is the final set of Tutor Professional Development Handbooks to be written, bringing an end to three years of writing by teams from across the four mentoring Universities (Kwame Nkrumah University of Science and Technology, University for Development Studies, University of Ghana and University of Education, Winneba) and Colleges of Education.

It marks a beginning because the significant reforms in teacher education which these Handbooks are helping to bring about has only just begun. The first student teachers who have directly benefitted from these Handbooks entered Colleges of Education in 2019 and won't graduate until 2023. Once these B.Ed. graduates enter Ghana's basic school classrooms, I am confident that we will see a year-on-year increase in the number of teachers meeting the quality benchmarks set out in the National Teachers' Standards (NTS).

It is our intention and belief that these Handbooks will be used in Universities and Colleges of Education for many years to come and that they will play a central role in helping us to bring about a sustained transformation in our basic education system so that we achieve the goal of the Education Strategic Plan (2018-2030) that "all pupils are equipped with appropriate literacy, numeracy and social development skills to effectively transition to second cycle education."

I would like to take this opportunity to thank the Ghana Tertiary Education Commission, the UK's Foreign, Commonwealth and Development Office (FCDO) and Mastercard Foundation for their support over the past three years in making all this possible.

Robin Todd
Executive Director, T-TEL
June 2022

Tutor PD Session		
Age Level: JHS Name of Subject/s: (LM & PCM)		
1. Laboratory Management and PC Maintenance Topic: Components of computer I 2. Legal and Security Issues in ICT (LSI) Topic: Security fundamentals I		
Tutor PD Session for Lesson 1 in the Course Manual		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1a Introduction to the semester – in session one ➤ Overview of subject/age level/s to be covered in the PD sessions and guidance on grouping tutors according to the subject/s, age level/s. ➤ Introduction to the course manual/s ➤ Overview of course learning outcomes ➤ Introduction to the two continuous assessment components to be undertaken in each subject during the semester (See Course Assessment Components Appendix NB in subjects where there are no assessment components in the	1.1 Discuss of courses to be covered in the PD sessions for the semester. <i>i.e., Laboratory Management and PC maintenance (LM & PCM) as well as Legal and Security Issues in ICT (LSI).</i> Note: These PD manuals are designed to equip tutors handling student teachers offering the JHS specialism in ICT with requisite skills to. ➤ <i>enable them provide understanding of the fundamentals of information security and to introduce student teachers to the management of computer laboratories.</i> ➤ <i>teach compatibility issues relating to hardware specifications that are required to run operating systems and various application programs to the student teachers.</i> 1.2 Read the course description, the purpose of the course manuals and indicate how they are related to student teachers' relevant previous knowledge for whole group discussion. 1.3 Write the course learning outcomes (CLOs) from the course manuals for discussion. E.g.,	20 mins

<p>course manuals examples will need to be provided by the SWL for the SL/HoD.</p> <p>1b Introduction to the session</p> <ul style="list-style-type: none"> ➤ Review prior learning ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, <p>NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. NB SL/HoD should ask tutors to plan for their teaching as they go through the PD session</p>	<p>LSI</p> <p>CLO1: Understand the principles of Information security concepts. (NTS 2b, 2c, 3b, 3c, 3d, 3e, 3h, 3i, 3k, 3n, 3p NTECF: Pillars 1, 2 & 3, crosscutting issues; Core skills, Assessment, Professional values and attitudes)</p> <p><i>CLI 1:</i> Explain Information security concepts.</p> <p>LM & PCM</p> <p><i>CLO 1:</i> Identify computer systems/subsystems and discuss their functions and interactions</p> <p>CLI 1: Explain the functions of the various components of a computer</p> <p>1.4 In pairs, discuss the two assessment components for the lesson. (Subject portfolio and subject project).</p> <p>E.g.</p> <p>Subject Portfolio Create e-portfolio to contain a preventive and corrective maintenance plan.</p> <p>Subject Project I. Student teachers to install and configure operating systems and device drivers</p> <p>Introduction to the lesson</p> <p>1.5 Review the previous lessons learnt in Year 3 semester 2 PD sessions i.e., Technology Leadership and Management. E.g., IT Management Best Practices, and how you applied them in your teaching.</p> <p>1.6 i. Read the introductory sections of lesson 1 up to the learning outcomes and their corresponding indicators individually and then discuss in pairs (mixed pairs where applicable).</p> <p><i>E.g.,</i> LM & PCM <i>This lesson focuses on the characteristics of the computer system unit. Student teachers will have</i></p>	
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	<p><i>an opportunity to examine the basic building blocks of the computer system unit.</i></p> <p>LSI <i>In this lesson, Student teachers will be introduced to security fundamentals I.</i></p> <p>Distinctive Aspects 1.7 i. Write down the distinctive aspects of the lessons from the course manual. e.g.,</p> <p>LM & PCM Computer systems/subsystems.</p> <p>LSI Information Security Principles</p> <p>ii. Identify areas that need further clarification in the lesson. E.g.,</p> <p>LM & PCM System Unit and CPU</p> <p>LSI Confidentiality, Integrity and Availability <i>NB: Plan for your teaching as you go through the PD session. E.g., using Tutor-led discussion, self-prepared videos or from YouTube video to aid the lesson.</i></p>	
<p><i>As this course is dealing with supporting and/or assessing the Professional Teaching Portfolio Development and/or the Classroom Enquiry and Action Research Project Report writing, tutors should be provided with guidance on what to do including organisation of Post Internship Seminar.</i></p>	<p>1.9. i. Brainstorm the Professional Teaching Portfolio (PTP) Development and the Action Research Project Report writing. e.g., Professional teaching portfolio as evidence of student teachers' progress towards being a teacher as a starting point for continuous professional development (CPD), including their Student Reflective Journal (SRJ) with evaluations of their teaching and target setting for personal and professional development</p> <p>ii. Discuss with your colleagues the development of components of the PTP and Action Research report writing. E.g.,</p>	

	<p>a. Advising the student teachers to select the artefacts they have collected that are representative of knowledge gained or depicting something unique and start to develop their professional teaching portfolio.</p> <p>b. Guiding the student teacher on how to file the artefacts collected.</p> <p>Refer to STS Year Three School Placement Handbook. Table 8.2.7.2 pg. 117.</p>	
<p><i>For each session remember this is the final semester before Students start teaching provide prompts to help support this transition for planning and give regard for GESI, CCI, ICT etc</i></p>	<p>1.10 Identify some ways by which student teachers can integrate ICT, GESI and CCI into their teaching and learning.</p> <p>e.g.,</p> <p>a. Embedding videos into lessons</p> <p>b. Giving equal opportunities to both gender when teaching</p> <p>c. Promoting problem solving skills like troubleshooting a PC</p>	
<p>2 Concept Development (New learning likely to arise in lesson/s):</p> <p>➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD</p> <p>NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors</p>	<p>Concept Development</p> <p>2.1 Identify the concepts in lesson 1 of the course manuals for discussion. I.e.,</p> <p>LSI Security fundamentals I</p> <p>LM & PCM Components of computer I</p> <p>2.2 Write a possible barrier in learning the concept above for discussion.</p> <p><i>E.g.,</i></p> <p>LSI Some student teachers might not have had knowledge and understanding of Information Security in Education and its impact on teaching and learning.</p> <p>LM & PCM Large class sizes in some colleges</p> <p>2.3 Identify appropriate teaching strategies that can best explain the new concepts identified.</p>	15 mins

	<p><i>E.g., Discovery learning: Allowing students maximum freedom within a resource-rich environment to ‘discover’ answers to challenges. It requires students to build upon prior knowledge and use resources available in the environment to increase their own knowledge.</i></p>	
<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit</i> links to the Basic School Curriculum ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning ➤ Resources: <ul style="list-style-type: none"> ○ links to the existing PD Themes, for example, action research, questioning and to other external reference 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1. In pairs, watch the YouTube videos below on any internet enabled device available.</p> <p>LSI – Information Security Principles https://www.youtube.com/watch?v=6UEiQ9vUGWo</p> <p>LM &PCM – The system board https://youtu.be/dpf3BvZyVT0</p> <p>3.1.1 Discuss the content of the videos in relation to the teaching and learning activities in the course manuals.</p> <p>3.2 Note areas that require clarification and/or contribution.</p> <p><i>E.g.,</i> LSI The pros and cons in information security principles</p> <p>LM &PCM <i>Differences between Processors and Memories</i></p> <p>3.3. Discuss how the different activities would be carried out in both CoE and the Basic School Curriculum (BSC) to achieve the LOs and the LIs of the course manual for lesson 1.</p> <p><i>E.g.,</i> LSI <i>Student teachers explain Information security concepts.</i></p>	

<p>material: literature, on web, YouTube, physical resources, power point; how they should be used. Consideration needs to be given to local availability</p> <ul style="list-style-type: none"> ○ guidance on any power point presentations, TLM or other resources which need to be developed to support learning <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>LM &PCM <i>Student teachers explain the functions of the various components of a computer</i></p> <p>3.4. In pairs or small groups, discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed. <i>E.g., Equal representation of both gender of different ethnicity and mixed ability grouping as appropriate.</i></p> <p>3.5 Read and discuss the assessment activities in the course manuals and identify areas in the lesson that can be used for assessment especially on NTEAP related activities.</p> <p>E.g., <i>Presentation of individual reflective notes on analysis of the videos with the links:</i></p> <p>LSI - Information Security Fundamentals <u>https://youtu.be/bNhlfHhrklo</u></p> <p>LM &PCM - Components of Computer System <u>https://youtu.be/A1LwJRYiaho</u></p> <p>Note</p> <p>Ask student-teachers to work in groups (in mixed ability and pay attention to the composition of females and males during the group work). Remind student teachers to use either concept maps, or multimedia for the presentations</p> <p>3.6 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school curriculum.</p> <p><i>E.g., A personal Computer, Instructional Laboratories (with multimedia equipment and smartboards), Videos</i></p> <p><i>Make sure the resources are enough and appropriate for all learners (especially people with SEN).</i></p> <p>3.7. Brainstorm a plan that will be appropriate for the next lesson:</p>	
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	<p>LSI Security fundamental II</p> <p>LM &PCM Computer Components II</p>	
<p>4. Evaluation and review of session:</p> <p>a. Tutors need to identify critical friends to observe lessons and report at next session</p> <p>b. Identifying and addressing any outstanding issues relating to the lesson/s for clarification</p>	<p>Evaluation and review of session</p> <p>4.1 Identify a critical friend to sit in your class during lesson and report on observation during the next PD session.</p> <p>4.2 Identify any outstanding issues relating to lesson one from the course manual for clarification</p> <p>4.3 Read lesson 2 from the PD manual and find relevant materials for the next session.</p>	15 mins

Tutor PD Session		
Age Level: JHS	NAME of Subject/s: 1. Laboratory Management and PC Maintenance (LM & PCM) Topic: Components of the computer II 2. Legal and Security Issues in ICT (LSI) Topic: security fundamentals II	
Tutor PD Session for Lesson 2 in the Course Manual		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1 Introduction to the session <ul style="list-style-type: none"> ➤ Review prior learning ➤ A critical friend to share findings for a short discussion and lessons learned ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, <p>NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. SL/HoD take</p>	Introduction to the session <i>Start with an icebreaker</i> 1.1 Discuss the previous lessons on systems boards, processors and memory to recap knowledge from previous PD Session (Lesson 1) and state how useful it was on the lesson taught. 1.2 As a critical friend who observed Lesson 1, share your experiences and the impact on your facilitating in class 1.3 Read the introduction, lesson description and the purpose of lesson 2 in the course manual and indicate how they are related to student teachers' relevant previous knowledge. Distinctive Aspect 1.4 In groups of two (where applicable) identify the distinctive aspects of the lesson 2 from the course manuals for discussion.	20 mins

<p>feedback to gauge understanding and support tutor engagement. NB SL/HoD should ask tutors to plan for their teaching as they go through the PD session</p>	<p>E.g., LSI - Security Concepts</p> <ul style="list-style-type: none"> ➤ Vulnerabilities ➤ Threats ➤ Threat Actors ➤ Exploits ➤ Risk <p>LM & PCM - Components of computer II</p> <p>i. Disk Drives ii. Installation and Support of Hard Drives iii. Installation and support of Power Supply units</p>	
<p>As this course is dealing with supporting and/or assessing the Professional Teaching Portfolio Development and/or the Classroom Enquiry and Action Research Project Report writing, tutors should be provided with guidance on what to do including organisation of Post Internship Seminar.</p>	<p>1.5 Discuss the appropriate interventions that can be used to address identified learning needs of learners in the classroom.</p> <p>e.g.,</p> <p><i>i. Guiding the student teacher on how to write a report and include videos or pictures of interventions they used to address the learners' needs.</i></p> <p><i>ii. Task them to include the report in their portfolio.</i></p> <p>Refer to Table 7.2.2b: of the STS placement handbook page 40:</p>	
<p>For each session remember this is the final semester before Students begin teaching provide prompts to help support this transition for planning and give regard for GESI, CCI, ICT etc.</p>	<p>1.6. In pairs identify ways by which student teachers can integrate ICT, GESI and CCI into their teaching and learning in the classroom.</p> <p>e.g.,</p> <p><i>a. Delegating roles to females and males equally. (NTS 1c).</i></p> <p><i>b. the use of PowerPoint software to deliver lessons.</i></p> <p><i>c. Promoting creativity like troubleshooting a PC.</i></p>	
<p>2 Concept Development (New learning likely to arise in lesson/s):</p> <ul style="list-style-type: none"> ➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being 	<p>Concept Development</p> <p>2.1 Using brainstorming, write at least two major concepts in the lesson from the course manuals and share with the whole group. e.g.,</p> <p>LSI</p> <p>Security fundamental II</p> <ul style="list-style-type: none"> ➤ Vulnerabilities ➤ Threats 	15 mins

<p>introduced in the lesson, which need to be explored with the SL/HoD</p> <p>NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors, they should take feedback to gauge understanding and support tutor engagement.</p>	<p>LM & PCM - Components of computer II</p> <p>i. Disk Drives ii. Installation and Support of Hard Drives</p> <p>2.2 Discuss the potential misconceptions and barriers with respect to the concepts listed in 2.1.</p> <p>E.g., LSI Some student teachers might not have had knowledge and understanding of Security Concepts in Education and its impact on teaching and learning.</p> <p>LM & PCM Negative views of ICT and large class sizes in some colleges</p> <p>2.3 Identify the most appropriate teaching strategies that can be employed to best explain the new concepts identified</p> <p>E.g., <i>Discovery learning:</i> <i>Allowing students maximum freedom within a resource-rich environment to ‘discover’ answers to challenges. It requires students to build upon prior knowledge and use resources available in the environment to increase their own knowledge.</i></p>	
<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit links</i> to the Basic School Curriculum ➤ Noting opportunities for integrating: GESI 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1. Read through the teaching and learning activities outlined in the lesson from the course manual individually for whole group discussion.</p> <p>E.g., LSI Tutor shows a video of the types of hard drives and engages the student teachers in a discussion of the types of hard drives identified from the videos and/or images shown to them</p>	40 mins

<p>responsiveness and ICT and 21st C skills</p> <ul style="list-style-type: none"> ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning, subject specific examples should be provided for SL/HoD ➤ Resources: links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, Utube, physical resources, power point; how they should be used. Consideration needs to be given to local availability. ➤ Tutors should be expected to have a plan for the next lesson for student teachers 	<p>3.2 Watch a video on:</p> <p>LSI Vulnerabilities in ICT and under which circumstances recommendations can be made https://youtu.be/2VaPTluRs4k</p> <p>LM & PCM How a hard disk works using the link https://youtu.be/wteUW2sL7bc</p> <p>3.2.1 Discuss your findings with the larger group</p> <p>3.3 Note areas that require clarification and/or contribution. E.g.,</p> <p>LSI The difference between threats and vulnerabilities https://youtu.be/wKL5o4NEWr4</p> <p>LM & PCM Managing Hard drives as well as installing and managing power supply units</p> <p>3.4. Discuss in groups how the different activities would be carried out in both CoE and the Basic School Curriculum (BSC) to achieve the LOs and the LIs of the course manual for the lesson. <i>E.g.,</i></p> <p><i>Tutor tasks student teachers to write reflective notes on the lesson treated.</i></p> <p>3.5 Using think-pair- share, discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed.</p> <p><i>E.g., Males and females taking turns in leading roles and Inclusivity.</i></p> <p>3.6 identify any 21st century skills that can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills.</p> <p><i>E.g., The use of smartphones to prepare and present lessons.</i></p>	
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	<p>3.7 Read and discuss the assessment activities in the manual and identify areas in the lesson that can be used for assessment in alignment with NTEAP related activities.</p> <p><i>E.g., Explain the concepts of Component of computer II and security fundamentals II.</i></p> <p>NB: Remember to focus on <i>subject project and the subject portfolio of the NTEAP document.</i></p> <p>3.8 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classroom.</p> <p><i>E.g., a YouTube Video, Coursera, Khan Academy, Projector, Laptop (PC)</i></p> <p>3.9. Brainstorm a plan that will be appropriate for the next lesson:</p> <p>LSI Security fundamentals II LM &PCM Components of the computer II</p> <p><i>Remember to have a concrete plan for teaching the next lesson to student teachers</i></p>	
<p>4. Evaluation and review of session:</p> <ul style="list-style-type: none"> ➤ Tutors should Identifying critical friends to observe lessons and report at next session ➤ Identifying and addressing any outstanding issues relating to the lesson/s for clarification 	<p>Evaluation and review of session</p> <p>4.1. Identify any outstanding issues relating to the lesson for clarification.</p> <p>4.2 Identify a critical friend to sit in your class during lesson and report on observation during the next PD session</p> <p>4.3 Read lesson 3 from the PD manual and find relevant materials for the next session.</p>	<p>15 mins</p>

Tutor PD Session		
Age Levels: JHS	Name of Subject/s: 1. Laboratory Management and PC maintenance (LM & PCM) Topic: Building/Upgrading a computer 2. Legal and Security Issues in ICT (LSI) Topic: Access Control Fundamentals (introduction to Accountability process) I	
Tutor PD Session for Lesson 3 in the Course Manual		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1 Introduction to the session ➤ Review prior learning ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. NB SL/HoD should ask tutors to plan for their	Introduction to the lesson 1.1 Using questioning, review and reflect on the previous PD Session (Lesson 2) and how useful it was on lessons taught. i.e., LM & PCM Components of computer II LSI Security fundamental II 1.2 As a critical friend who observed Lesson 2, share your experiences and the impact on your facilitating in class 1.3 Read the introduction, lesson description and the purpose of lesson 4 in the course manual and indicate how they are related to student teachers' relevant previous knowledge	20 mins

<p>teaching as they go through the PD session</p>	<p><i>E.g.,</i> LM & PCM <i>This lesson is to expose student teachers to and help them understand disk drives and power supply units and be able to choose which ones are suitable for use in the school system.</i></p> <p>LSI <i>In this lesson, student teachers will examine the various security concepts in Information Technology</i></p> <p>Distinctive Aspects</p> <p>1.4. Pair with a colleague and i. identifies the distinctive aspects of the lesson. e.g.,</p> <p>LM & PCM Disk Drives</p> <p>LSI Vulnerabilities ii. Identify areas that need further clarification in the lesson. E.g.,</p> <p>LM & PCM Hard disk drive support</p> <p>LSI Threat Actors and Exploits</p> <p><i>NB: Plan for your teaching as y go through the PD session. E.g., using Tutor-led discussion, self-prepared videos or from YouTube video to aid the lesson.</i></p>	
<p><i>As this course is dealing with supporting and or assessing the Professional Teaching Portfolio Development or the Classroom Enquiry and Action Research Project report writing, tutors should be provided with guidance on what to do</i></p>	<p>1.5 Discuss together the development of components of the PTP and Action Research report writing by the student teachers. E.g.,</p> <p>a. Reflecting with the student teachers their experiences from the school on issues on GESI and the use of ICT tools and how these influence their values of teaching and learning.</p> <p>b. Guiding the student teacher on how to collect data on learners during lesson delivery</p>	

<p><i>including organisation of Post Intern Seminar.</i></p>	<p>Refer to STS Year Three School Placement Handbook. Table 8.2.7.2 pg. 93, 115.</p>	
<p><i>For each session remember this is the final semester before Students start teaching provide prompts to help support this transition for planning and give regard for GESI, CCI, ICT etc.</i></p>	<p>1.6 Identify some ways by which student teachers can integrate ICT, GESI and CCI into their teaching and learning.</p> <p>e.g.,</p> <ol style="list-style-type: none"> a. Recording students' readings, b. Giving equal opportunities and treatments to all learners including the marginalised. 	
<p>2 Concept Development (New learning likely to arise in lesson/s):</p> <p>➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD</p> <p>NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors</p>	<p>Concept Development</p> <p>2.1 Identify the concepts in lesson 3 of the course manuals for discussion. I.e.,</p> <p>LSI Access Control Fundamentals (introduction to Accountability process)</p> <p>LM & PCM Building/Upgrading a computer</p> <p>2.2 Write a possible barrier in learning the concepts (Access Control Fundamentals and Building/ Upgrading a computer) above for discussion.</p> <p><i>E.g.,</i></p> <p>LSI <i>Some student teachers might not have had knowledge and understanding of Access control fundamentals in ICT and its impact on teaching and learning.</i></p> <p>LM & PCM <i>Student teachers may have had very limited prior experience of using ICT tools</i></p> <p>2.3 Identify appropriate teaching strategies that can best explain the new concepts identified.</p> <p><i>E.g., Modelled Teaching:</i> <i>Modelled teaching is an instructional strategy that involves the teacher 'showing' students how to do a task. The teacher shows the task while also breaking it down into small steps. This helps students to see how to complete the task.</i></p>	<p>15 mins</p>

<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit</i> links to the Basic School Curriculum ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning ➤ Resources: <ul style="list-style-type: none"> ○ links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used. Consideration needs to be given to local availability ○ guidance on any power point presentations, TLM 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1. Watch the YouTube videos with the links below</p> <p>LSI – Access Control Fundamentals https://youtu.be/XvR6ww7F54w</p> <p>LM &PCM – Building/Upgrading a computer https://www.youtube.com/watch?v=eYtSQkd7dQk</p> <p>3.1.1 Read through the teaching and learning activities outlined in lesson 3 of the courses manuals and relate it to the video watched for group discussion.</p> <p>3.2 Note areas that require clarification and/or contribution. <i>E.g.,</i></p> <p>LSI <i>Identification</i></p> <p>LM &PCM PCI Slots, SATA</p> <p>3.3. Discuss how the different activities would be carried out in both CoE and the Basic School Curriculum (BSC) to achieve the LOs and the LIs of the course manual for lesson 3. <i>E.g.,</i></p> <p>LSI <i>Student teachers explain different security control systems to protect information systems.</i></p> <p>LM &PCM <i>Student teachers present individual reflective notes on the process of assembling a computer</i></p> <p>3.4. In pairs or small groups, discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed. <i>E.g., NTS 3f: Pays attention to all learners, especially girls and students with Special Educational needs, ensuring their progress, 1a.</i></p>	
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<p>or other resources which need to be developed to support learning</p> <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>3.5 Read and discuss the assessment activities in the course manuals and identify areas in the lesson that can be used for assessment especially on NTEAP related activities. E.g.,</p> <p><i>Presentation of individual reflective notes on analysis of the videos with the links:</i></p> <p>LSI – Access Control Fundamentals https://youtu.be/bNhIfHhrklo</p> <p>LM &PCM - Building/Upgrading a computer https://www.youtube.com/watch?v=yGsc7x88KQI</p> <p>Note Encourage tutors to ask student-teachers to work in groups (in mixed ability and pay attention to the composition of females and males during the group work).</p> <p>3.6 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school curriculum.</p> <p><i>E.g., A personal Computer, Instructional Laboratories (with multimedia equipment and smartboards) as well as Videos</i></p> <p><i>Make sure the resources are enough and appropriate for all learners (especially people with SEN).</i></p> <p>3.7 Brainstorm a plan that will be appropriate for the next lesson:</p> <p>LSI Access Control Fundamentals (introduction to Accountability process) I</p> <p>LM &PCM Building/Upgrading a computer</p>	
<p>4. Evaluation and review of session:</p> <p>➤ Tutors need to identify critical friends to</p>	<p>Evaluation and review of session</p> <p>4.1 Identify a critical friend to sit in your class during lesson and report on observation during the next PD session.</p>	<p>15 mins</p>

<p>observe lessons and report at next session</p> <p>➤ Identifying and addressing any outstanding issues relating to the lesson/s for clarification</p>	<p>4.2 Identify any outstanding issues relating to lesson 3 from the course manual for clarification</p> <p>4.3 Read lesson 4 from the PD manual and find relevant materials for the next session.</p>	
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Tutor PD Session		
Age Levels: JHS	Name of Subject/s: 1. Laboratory Management and PC maintenance (LM & PCM) Topic: Software Installation I 2. Legal and Security Issues in ICT (LSI) Topic: Access Control Fundamentals (Authentication types) II	
Tutor PD Session for Lesson 4		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1 Introduction to the session ➤ Review prior learning ➤ A critical friend to share findings for a short discussion and lessons learned ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of	Introduction to the session 1.1 Write any new thing you learnt in your last PD session on lesson 3. i.e., LSI: Access Control I LM & PCM: Assembling components 1.1.1 Share what you have written for the whole group discussion. 1.2 As a critical friend who observed Lesson 3, share your experiences and the impact on your facilitating in class 1.3 Read the introduction, lesson description and the purpose of lesson 4 in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	20 mins

<p>the lesson. SL/HoD take feedback to gauge understanding and support tutor engagement. NB SL/HoD should ask tutors to plan for their teaching as they go through the PD session</p>	<p>E.g., LSI: Student teachers will explore Authentication types under Access control fundamentals. (National Teachers’ Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</p> <p>LM & PCM: Student teachers will be exposed to how to configure and install software on a computer system. (National Teachers’ Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</p> <p>Distinctive Aspect 1.4. Write anyone (1) distinctive aspect of the lesson for discussion. i.e.</p> <p>LSI: Authentication</p> <p>LM & PCM: Formatting and Partitioning</p> <p>1.4.1 Ask tutors to share their responses with a colleague.</p>	
<p>As this course is dealing with supporting and or assessing the Professional Teaching Portfolio Development or the Classroom Enquiry and Action Research Project Report writing, tutors should be provided with guidance on what to do including organisation of Post Internship Seminar.</p>	<p>1.5 Remind student teachers to use the ideas generated to prepare a template for building a professional teaching portfolio.</p> <p>1.6 Remind the student teachers to observe the entire class during lesson deliveries and closely take note of learners with special learning needs using observation guide they have designed.</p>	
<p><i>For each session remember this is the final semester before Students begin teaching provide prompts to help support this transition for planning and</i></p>	<p>1.7 Encourage student teachers to make a recording of a lesson they delivered with the help of ICT tools (e.g., your phone, a video camera, an audio tape recorder).</p>	

<p><i>give regard for GESI, CCI, ICT etc.</i></p>		
<p>2 Concept Development (New learning likely to arise in lesson/s):</p> <ul style="list-style-type: none"> ➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD <p>NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors, they should take feedback to gauge understanding and support tutor engagement.</p>	<p>Concept Development</p> <p>2.1 Discussion the major concepts in the lesson: <i>e.g.,</i></p> <p>LSI: Authentication.</p> <p>LM & PCM: Formatting and partitioning of drives.</p> <p>2.2 Discuss the potential misconceptions and barriers with respect to the concepts listed above.</p> <p><i>E.g.,</i> Some student teachers might not have had knowledge and understanding of Authentication types under Access control fundamentals and its impact on teaching and learning.</p> <p>2.3 Identify the most appropriate teaching strategies that can be employed to best explain the new concepts identified.</p> <p><i>E.g., Using a demonstration to show a student teacher how a mobile phone authenticates a user.</i></p>	<p>15 mins</p>
<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit links</i> to the Basic School Curriculum ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1 Read the teaching and learning activities of lesson 4 from the course manual. <i>E.g.,</i></p> <p>LSI: Show a video on Authentication by Knowledge.</p> <p>LM & PCM: Introduces student teachers to the formatting and partitioning drives and why it is necessary to format.</p> <p>3.2 Identify any aspect that needs clarification. <i>e.g.,</i></p> <p>LSI: Authentication</p>	<p>40 mins</p>

<p>➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning, subject specific examples should be provided for SL/HoD</p> <p>➤ Resources: links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, Utube, physical resources, power point; how they should be used. Consideration needs to be given to local availability</p> <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>LM & PCM Formatting</p> <p>3.3 In groups of at least 2 discuss how the different activities would be carried out in both CoE and the Basic School Curriculum (BSC) to achieve the LOs and the LIs of lesson 10 from the course manuals. e.g.,</p> <p>LSI: Student teacher watches video and answers questions about what Authentication Ownership entails.</p> <p>LM & PCM: Student teachers work in smaller groups to discuss the aspects of formatting and partitioning drives assigned to them and give a presentation to the class.</p> <p>3.3 Discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed in the lesson.</p> <p><i>E.g., Student teacher should make sure that Constructive/Positive verbal feedback is to both male and female in class.</i></p> <p>3.4 Identify any 21st century skills that can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills through STS activities.</p> <p><i>E.g., Collaboration: Group presentation on written reports.</i></p> <p>3.5 Read the assessment activities in the course manual and identify areas that require clarification.</p> <p><i>E.g.,</i></p> <p>LSI: Student teachers work on authentication by ownership and Authentication by Characteristic as an assignment and write notes in their reflective journals.</p>	
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	<p>LM & PCM: Group presentations of discussions in class to be assessed by student teachers themselves.</p> <p><i>Note!!</i> <i>These could be added to their subject portfolio/ project</i></p> <p>3.6. Identify inclusive resources for teaching and learning of the concepts in both CoE and basic school classroom.</p> <p><i>E.g., Smart phones, Audio-visuals from YouTube, projector.</i></p> <p>3.7 Have concrete plans for teaching the next topic.</p>	
<p>4. Evaluation and review of session:</p> <ul style="list-style-type: none"> ➤ Tutors should Identifying critical friends to observe lessons and report at next session ➤ Identifying and addressing any outstanding issues relating to the lesson/s for clarification 	<p>Evaluation and review of session</p> <p>4.1. Individually identify any outstanding issues relating to lesson 4 to be addressed.</p> <p>4.2. Identify a critical friend to observe the PD session and report on observations during the next PD session.</p> <p>4.3. Read lesson 5 from the PD manual and find its relevant materials for the next session.</p>	15 mins

Tutor PD Session		
Age Level: JHS	Name of Subject/s: 1. Laboratory Management and PC Maintenance (LM & PCM) Topic: Software Installation I 2. Legal and Security Issues in ICT (LSI) Topic: Access Control Fundamentals (Authentication methods) III	
Tutor PD Session for Lesson 5		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1 Introduction to the session ➤ Review prior learning ➤ A critical friend to share findings for a short discussion and lessons learned ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. SL/HoD take	Introduction to the session 1.1 Reflect and discuss the previous PD Session (Lesson 4) and its benefits on the lessons thought i.e., LSI Access Control Fundamentals (Authentication types) II e.g., Authentication by Knowledge LM & PCM Software installation I e.g., Formatting and partitioning of drives and installation of operating systems 1.2 As a critical friend who observed Lesson 4, share your experiences and the impact on your facilitating in class 1.3 Read the introduction, lesson description and the purpose of lesson 5 in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	20 mins

<p>feedback to gauge understanding and support tutor engagement. NB SL/HoD should ask tutors to plan for their teaching as they go through the PD session</p>	<p>E.g., LSI <i>Student teachers will explore Authentication types under Access control fundamentals. (National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes)</i> LM & PCM <i>Student teachers will be exposed to the processes for installing an application/ utility/ antivirus software on a computer</i> Distinctive Aspects</p> <p>1.4. Write 1 distinctive aspect of the lessons from the course manual for group discussion. e.g.,</p> <p>LSI Mechanisms for authentication</p> <p>LM & PCM i. Device and Driver installation ii. Application Software installation iii. Antivirus</p>	
<p>As this course is dealing with supporting and/or assessing the Professional Teaching Portfolio Development and/or the Classroom Enquiry and Action Research Project Report writing, tutors should be provided with guidance on what to do including organisation of Post Internship Seminar.</p>	<p>1.5 Discuss together the development of components of the PTP and Classroom Enquiry and Action Research report writing. E.g., i. Reviewing their personal teaching philosophy statement. ii. Guiding student teachers in framing research questions to undertake small scale research.</p>	
<p><i>For each session remember this is the final semester before Students begin teaching provide prompts to help support this transition for planning and give regard for GESI, CCI, ICT etc.</i></p>	<p>1.6 Identify some ways by which student teachers can integrate ICT, GESI and CCI into their teaching and learning. e.g., i. Checking to see if both the brilliant and weak learners understand the lesson. ii. Integrating educational games into lessons.</p>	

<p>2 Concept Development (New learning likely to arise in lesson/s):</p> <ul style="list-style-type: none"> ➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD <p>NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors, they should take feedback to gauge understanding and support tutor engagement.</p>	<p>Concept Development</p> <p>2.1 List and share with colleagues the major concept(s) in lesson 5 from the course manuals. E.g.,</p> <p>LSI Access Control Fundamentals (Authentication methods) III</p> <p>LM & PCM Software Installation II</p> <p>2.1.1 Discuss the major concepts identified in 2.1 above</p> <p>2.2 Write any possible challenge/ misconception in teaching the concept above for discussion. e.g.,</p> <p>LSI <i>Some student teachers might not have had knowledge and understanding of Access control fundamentals II</i></p> <p>LM & PCM <i>Colleges of education may have large class sizes that will hinder practical lessons</i></p> <p>2.3 Identify any appropriate teaching strategy that can be used to best explain the new concepts identified. E.g.,</p> <p>LSI <i>Engaging in a discussion to explain mechanisms for authentication</i></p> <p>LM & PCM <i>Using practical approach to demonstrate how to format, partition and install an application / utility/ antivirus software on a computer</i></p>	<p>15 mins</p>
<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1 Read the teaching and learning activities of lesson 5 from the course manual.</p>	<p>40 mins</p>

<ul style="list-style-type: none"> ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit links</i> to the Basic School Curriculum ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning, subject specific examples should be provided for SL/HoD ➤ Resources: links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used. Consideration needs to be given to local availability <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>3.1.1 Identify areas that require further clarifications. E.g., LSI <i>Other mechanisms of Authentication</i></p> <p>LM & PCM <i>Antivirus versus Firewall</i></p> <p>3.2 Discuss how the different activities identified would be carried out in both CoE and basic school curriculum to achieve the LOs and the LIs of the course manual for lesson. E.g., LSI <i>Tutor breaks class into small diverse groups to analyse the video identifying Authentication by Knowledge</i></p> <p>LM & PCM <i>Tutor shows images/videos on the process of installing an operating system onto a computer.</i></p> <p>3.3 Identify any core and transferable skills, including 21st skills and the use of information technology tools can be developed or applied in the lesson and demonstrate how you can help student teachers to support basic school learners to develop these skills. E.g., <i>Critical thinking skills of Student teachers to develop wikis in their respective groups on “the processes for installing an application/utility/antivirus Software on a computer</i></p> <p>3.4 Read and discuss the assessment activities in the manual and identify areas in the lesson that can be used for assessment especially those in alignment with the NTEAP related activities. E.g., LSI <i>Student teachers do a group presentation on mechanisms for authentication to recap the lesson.</i></p>	
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	<p>LM & PCM</p> <p><i>i. Quiz to evaluate knowledge on Installing system and application software</i></p> <p><i>ii. Individual student teachers develop reflective notes and ask questions to clarify thinking.</i></p> <p>3.4.1 Your focus should be on subject project and the subject portfolio of NTEAP document.</p> <p><i>NB: Make sure you have a real plan for teaching the given topics with emphasis on equality and inclusivity of both gender</i></p> <p>3.5 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classroom.</p> <p>E.g., Ms. PowerPoint, Laptop, smartphones, system units</p> <p>3.6. Have a concrete plan that would be employed in teaching the next lesson in class i.e.,</p> <p>LSI Access Control Fundamentals (Authentication methods) III</p> <p>LM & PCM Software Installation II</p>	
<p>4. Evaluation and review of session:</p> <ul style="list-style-type: none"> ➤ Tutors should Identifying critical friends to observe lessons and report at next session ➤ Identifying and addressing any outstanding issues relating to the lesson/s for clarification 	<p>Evaluation and review of session</p> <p>4.1. Identify any outstanding issues relating to the lesson for clarification</p> <p>4.2 Identify a critical friend to sit in your class during lesson and report on observation during the next PD session</p> <p>4.3 Read lesson 6 from the PD manual and find relevant materials for the next PD session</p>	<p>15 mins</p>

Tutor PD Session		
Age Level: JHS	Name of Subject/s: 1. Laboratory Management and PC maintenance (LM & PCM) Topic: Troubleshooting common computer problems 2. Legal and Security Issues in ICT (LSI) Topic: Access Control Fundamentals (Authorization and Auditing methods) IV	
Tutor PD Session for Lesson 6 in the Course Manual		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1 Introduction to the session ➤ Review prior learning ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. NB SL/HoD should ask tutors to plan for their teaching as they go through the PD session	Introduction to the lesson 1.1 Write down one thing you learnt in the previous PD lesson (lesson 5) and give some reflections as to how useful it was on the lessons taught. i.e., LM & PCM Software Installation II LSI Access Control Fundamentals (Authentication methods) III 1.2 Invite the critical friend who observed the Lesson 5 to share their experiences and the impacts on their facilitating in class. 1.3 Read the introduction, lesson description and the purpose of lesson 6 in the course manual and indicate how they are related to student teachers' relevant previous knowledge <i>E.g.,</i> LM & PCM	20 mins

	<p><i>In this lesson, student teachers would be introduced to the basics of troubleshooting a computer.</i></p> <p>LSI <i>In this lesson, Student teachers will be introduced to Authorisation and Auditing Methods.</i></p> <p>Distinctive Aspects</p> <p>1.4. In smaller groups, i. identifies the distinctive aspects of the lesson.</p> <p>e.g., LM & PCM Diagnostic Procedures, Troubleshooting Techniques</p> <p>LSI Authorisation, Auditing</p> <p>ii. Identify areas that need further clarification in the lesson. E.g., LM & PCM Utility</p> <p>LSI Authorisation</p> <p><i>NB: Remember to plan for your teaching as they go through the PD session. E.g., using Tutor-led discussion, self-prepared videos or from YouTube video to aid the lesson.</i></p>	
<p><i>As this course is dealing with supporting and or assessing the Professional Teaching Portfolio Development or the Classroom Enquiry and Action Research Project Report writing, tutors should be provided with guidance on what to do including organisation of Post Intern Seminar.</i></p>	<p>1.5 Discuss with your colleagues the development of components of the PTP and Classroom Enquiry and Action Research report writing by the student teachers. E.g.,</p> <p>a. Reflecting with the student teachers their experiences from the school on issues on GESI and the use of ICT tools and how these influence their values of teaching and learning. b. Guiding the student teacher on how to collect data on learners during lesson delivery</p>	

	Refer to STS Year Three School Placement Handbook. Table 8.2.7.2 pg. 93, 115.	
<i>For each session remember this is the final semester before Students start teaching provide prompts to help support this transition for planning and give regard for GESI, CCI, ICT etc</i>	1.6 Identify some ways by which student teachers can integrate ICT, GESI and CCI into their teaching and learning. e.g., a. Creating videos from activities performed with learners, b. Supporting the student teacher to review their previous knowledge on SEN.	
2 Concept Development (New learning likely to arise in lesson/s): ➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors	Concept Development 2.1 Identify the concepts in lesson 6 of the course manuals for discussion. I.e., LSI Access Control Fundamentals (Authentication methods) III LM & PCM Building/Upgrading a computer 2.2 Write a possible barrier in learning the concepts (Access Control Fundamentals and Building/ Upgrading a computer) above for discussion. <i>E.g.,</i> LSI <i>Some student teachers might not have had knowledge and understanding of Web and Mobile Development in Education and its impact on teaching and learning</i> LM & PCM <i>Students may have misconceptions about policies and their effects on teaching and learning.</i> 2.3 Identify appropriate teaching strategies that can best explain the new concepts identified. <i>E.g., Guided Practice / Cognitive Apprenticeship: Students follow along with their teacher as an 'apprentice'. By working side-by-side, they learn</i>	15 mins

	<i>the subtle little things ('tacit knowledge') required to know in order to master a skill.</i>	
<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit</i> links to the Basic School Curriculum ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning ➤ Resources: <ul style="list-style-type: none"> ○ links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, Youtube, physical resources, power point; how they should be used. Consideration needs to be given to local availability 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1. Read through the teaching and learning activities outlined in lesson 6 of the course manuals for group discussion. e.g.,</p> <p>LSI Tutor uses an interactive lecturette to explain Authorization methods. Using videos Tutor will explain Authorization methods</p> <p>LM & PCM Tutor shows images/videos on the tools and diagnostic procedures for troubleshooting.</p> <p>3.2 Watch the YouTube video with the link below</p> <p>LSI – Authorisation and Auditing https://www.youtube.com/watch?v=BOFYZbvXRrg</p> <p>LM &PCM – Troubleshooting Computers https://www.youtube.com/watch?v=EJemXALS E6U</p> <p>3.2.1 Discuss with your colleagues the video you have watched in comparison with the learning activities outlined in lesson 6 of the course manuals.</p> <p>3.3 Note areas that require clarification and/or contribution. <i>E.g.,</i></p> <p>LSI Auditing Methods</p> <p>LM & PCM Diagnostic procedures</p> <p>3.3. Discuss how the different activities would be carried out in both CoE and the Basic School</p>	

<p>○ guidance on any power point presentations, TLM or other resources which need to be developed to support learning</p> <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>Curriculum (BSC) to achieve the LOs and the LIs of the course manual for lesson 6. <i>E.g.,</i></p> <p>LSI <i>Student teachers would watch videos about responsible use of technology systems.</i></p> <p>LM &PCM <i>Student teachers would prepare and give presentations in groups and individuals.</i></p> <p>3.4. In pairs or small groups, discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed.</p> <p><i>E.g.,</i> <i>NTS 3f: Pays attention to all learners, especially girls and students with Special Educational needs, ensuring their progress, 1a.</i></p> <p>3.5 Read and discuss the assessment activities in the course manuals and identify areas in the lesson that can be used for assessment in alignment with NTEAP related activities. <i>E.g.,</i></p> <p>LSI <i>Student teachers write to explain Authorisation and Auditing Methods.</i></p> <p>LM &PCM <i>Student teachers produce reflective notes on “diagnostic tools, diagnostic procedures, troubleshooting techniques, common PC problems and their fixes.</i></p> <p>Note Encourage student-teachers to work in groups (in mixed ability and pay attention to the composition of females and males during the group work).</p> <p>3.6 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school curriculum.</p>	
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	<p><i>E.g., A personal Computer, Instructional Laboratories (with multimedia equipment and smartboards) as well as Videos</i></p> <p><i>Make sure the resources are enough and appropriate to all learners (especially people with SEN).</i></p> <p>3.7 Brainstorm a plan that will be appropriate for the next lesson:</p> <p>LSI Access Control Fundamentals (Authorization and Auditing methods) IV</p> <p>LM &PCM Troubleshooting common computer problems</p>	
<p>4. Evaluation and review of session:</p> <ul style="list-style-type: none"> ➤ Tutors need to identify critical friends to observe lessons and report at next session ➤ Identifying and addressing any outstanding issues relating to the lesson/s for clarification 	<p>Evaluation and review of session</p> <p>4.1 Identify a critical friend to sit in your class during lesson and report on observation during the next PD session.</p> <p>4.2 Identify any outstanding issues relating to lesson 6 from the course manual for clarification</p> <p>4.3 Read lesson 7 from the PD manual and find relevant materials for the next session.</p>	<p>15 mins</p>

Tutor PD Session		
Age Level: JHS	Name of Subject/s: ICT	
Tutor PD Session for Lesson 7		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
<p>1 Introduction to the session</p> <ul style="list-style-type: none"> ➤ Review prior learning ➤ A critical friend to share findings for a short discussion and lessons learned ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, <p>NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. SL/HoD take feedback to gauge understanding and support tutor engagement. NB SL/HoD should ask tutors to plan for their</p>	<p>Introduction to the session Begin the lesson with an Ice Breaker</p> <p>1.1 Write any new thing you learnt in your last PD session on lesson 6. i.e., Knowledge and understanding of ...</p> <p>LSI: Access Control Fundamentals (Authorization and Auditing methods) IV</p> <p>LM & PCM: Troubleshooting common computer problems</p> <p>1.1.1 Share what you have written for the whole group discussion.</p> <p>1.2 As a critical friend who observed Lesson 6, share your experiences and the impact on your facilitating in class</p> <p>1.3 Read the introduction, lesson description and the purpose of lesson 6 in the course manual and indicate how they are related to student teachers' relevant previous knowledge.</p> <p>E.g., LSI: <i>Student teachers will explore Authentication types under Access control fundamentals.</i></p>	20 mins

<p>teaching as they go through the PD session</p>	<p>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</p> <p>LM & PCM: <i>Student teachers will be exposed to how to configure and install software on a computer system. (National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</i></p> <p>Distinctive Aspect 1.4. Write any 1 distinctive aspect of the lesson for discussion. i.e.</p> <p>LSI: <i>Logical Controls</i></p> <p>LM & PCM: <i>Maintenance Scheduling</i></p> <p>1.4.1 Share your responses with a colleague.</p>	
<p>As this course is dealing with supporting and or assessing the Professional Teaching Portfolio Development or the Classroom Enquiry and Action Research Project Report writing, tutors need to be provided with guidance on what to do including organisation of Post Internship Seminar.</p>	<p>1.5 Remind student teacher to use the ideas generated to prepare a template for building a professional teaching portfolio.</p> <p>ii. Remind the student teacher to observe the entire class during lesson deliveries and closely take note of learners with special learning needs using observation guide they have designed.</p>	
<p><i>For each session remember this is the final semester before Students begin teaching provide prompts to help support this transition for planning and give regard for GESI, CCI, ICT etc.</i></p>	<p>1.6 Encourage student teacher to make a recording of a lesson they deliver with the help of ICT tools (e.g., your phone, a video camera, an audio tape recorder).</p>	

<p>2 Concept Development (New learning likely to arise in lesson/s):</p> <ul style="list-style-type: none"> ➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD <p>NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors, they should take feedback to gauge understanding and support tutor engagement.</p>	<p>Concept Development</p> <p>2.1 List and share with an opposite gender (if applicable), the major concepts in the lesson.</p> <p>E.g., LSI: Logical Controls LM & PCM: Maintenance</p> <p>2.2 Write two (2) possible challenges/ misconceptions in teaching the concept above for discussion. <i>E.g., Some student teachers may have very limited skill and experience using a computer</i></p> <p>2.3 Identify some appropriate teaching strategies that can be used to best explain the new concepts identified. <i>E.g., Practical Work: Tutor guides student teachers to perform each task on a computer system.</i></p>	<p>15 mins</p>
<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit links</i> to the Basic School Curriculum ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21stC skills ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1 Read the teaching and learning activities of lesson 7 from the course manual. E.g.,</p> <p>LSI: <i>Tutor uses an interactive lecturette to explain Logical controls and leads a discussion on Logical controls.</i></p> <p>LM & PCM: <i>Tutor/lecturer uses questions to initiate discussion on what maintenance is. Tutor guides student teachers. (PDP Theme 2).</i></p> <p>3.2 Identify any aspect that needs clarification.</p> <p>3.3 In groups of at least two 2 if applicable, discuss how the different activities would be carried out in both CoE and the Basic School Curriculum (BSC) to achieve the LOs and the LIs of lesson 7 from the course manuals.</p>	<p>40 mins</p>

<p>continuous assessment to support student teacher learning, subject specific examples should be provided for SL/HoD</p> <p>➤ Resources: links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, YouTube, physical resources, power point; how they should be used. Consideration needs to be given to local availability</p> <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>e.g.,</p> <p>LSI: <i>Student teacher watches video and uses it to answer questions on types of Information security controls.</i></p> <p>LM & PCM: Student teachers watch videos to build an understanding of Computer maintenance and optimisation I.</p> <p>3.3 Discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed in the lesson. <i>E.g., Body language does not exclude girls or shows preferential treatment to boys</i></p> <p>3.5 Read the assessment activities in the course manual and identify areas that require clarification. <i>E.g.</i></p> <p>LSI: Student teachers write short notes with examples of the following under logical controls i.e., <i>Traditional Firewalls, Packet-Filtering Techniques, Application Proxies, Network Address Translation, Port Address Translation</i></p> <p>LM & PCM: <i>Students produce a maintenance plan for a school computer laboratory Students write reflective notes on maintaining school computer laboratories.</i></p> <p>3.6. Identify other inclusive resources for teaching and learning of the concepts in both CoE and basic school classroom. <i>E.g., Images/ videos, Projectors and computers</i></p> <p>3.7 Have plans for teaching the next topic.</p>	
<p>4. Evaluation and review of session:</p> <p>➤ Tutors should Identifying critical friends to observe</p>	<p>Evaluation and review of session</p> <p>4.1. Identify any outstanding issues relating to lesson 7 to be addressed.</p>	<p>15 mins</p>

<p>lessons and report at next session</p> <p>➤ Identifying and addressing any outstanding issues relating to the lesson/s for clarification</p>	<p>4.2. Identify a critical friend to observe the PD session and report on observations during the next PD session.</p> <p>4.3. Read lesson 8 from the PD manual and find its relevant materials for the next session.</p>	
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Tutor PD Session		
Age Levels/s:	Name of Subject/s: 1. Laboratory Management and PC Maintenance (LM & PCM) Topic: Computer maintenance and optimisation II 2. Legal and Security Issues in ICT (LSI) Topic: Information security controls (Physical & Administrative Controls) II	
Tutor PD Session for Lesson 8		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1 Introduction to the session <ul style="list-style-type: none"> ➤ Review prior learning ➤ A critical friend to share findings for a short discussion and lessons learned ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. SL/HoD take	Introduction to the session <i>Start with an icebreaker</i> 1.1 Discuss the previous lessons on systems boards, processors and memory to recap knowledge gained from previous PD Session (Lesson 7) and state how useful it was on the lesson taught. LSI Types of Information security controls (Logical Controls) I LM & PCM Computer maintenance and optimisation I 1.2 As a critical friend who observed Lesson 7, share your experiences and the impact on your facilitating in class 1.3 Read the introduction, lesson description and the purpose of lesson 8 in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	20 mins

<p>feedback to gauge understanding and support tutor engagement. NB SL/HoD should ask tutors to plan for their teaching as they go through the PD session</p>	<p>Refer to the course manual Distinctive Aspect</p> <p>1.4 In groups of two (where applicable) identify the distinctive aspects of the lesson 8 from the course manuals for discussion. E.g.,</p> <p>LSI - Information security controls II Physical controls administrative controls (ICT policies and administrative processes & procedures)</p> <p>LM & PCM – Computer maintenance and optimisation II</p> <p>Common maintenance activities</p>	
<p>As this course is dealing with supporting and/or assessing the Professional Teaching Portfolio Development and/or the Classroom Enquiry and Action Research Project Report writing, tutors should be provided with guidance on what to do including organisation of Post Internship Seminar.</p>	<p>1.5 Discuss with tutors the development of components of the PTP and Classroom Enquiry and Action Research report writing by the student teachers. E.g.,</p> <p>i. Keeping lesson evaluations from whole class teaching ii. Keeping a list of the challenges encountered in implementation of interventions of research they do.</p>	
<p>For each session remember this is the final semester before Students begin teaching provide prompts to help support this transition for planning and give regard for GESI, CCI, ICT etc.</p>	<p>1.6. Ask tutors to be in pairs and identify ways by which student teachers can integrate ICT, GESI and CCI into their teaching and learning in the classroom. e.g., a. the use of PowerPoint software to deliver lessons b. Promoting creativity like troubleshooting a PC. c. Delegating roles to females and males equally. (NTS 1c)</p>	
<p>2 Concept Development (New learning likely to arise in lesson/s): ➤ Identification and discussion of new learning, potential</p>	<p>Concept Development 2.1 Write at least a major concept in the lesson from the course manuals and share with the whole group</p>	<p>15 mins</p>

<p>barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD</p> <p>NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors, they should take feedback to gauge understanding and support tutor engagement.</p>	<p>e.g., LSI Information security controls II</p> <p>LM & PCM – Computer maintenance and optimisation II</p> <p>2.2 Discuss the potential misconceptions and barriers with respect to the concepts listed 2.1 above.</p> <p>E.g., LSI Some student teachers might not have had knowledge and understanding of information security</p> <p>LM & PCM Some student teachers may not have enough basic skills in maintaining computers</p> <p>2.3 Identify the most appropriate teaching strategies that can be employed to best explain the new concepts identified</p> <p>E.g., Cooperative learning: having students work together rather than in competition, requires students to talk to one another which can help them learn from each other’s perspectives.</p>	
<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit links</i> to the Basic School Curriculum 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1. Read through the teaching and learning activities outlined in the lesson from the course manual individually for large group discussion.</p> <p>E.g., LSI watch short videos from YouTube, on Physical controls and administrative controls.</p>	40 mins

<ul style="list-style-type: none"> ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning, subject specific examples should be provided for SL/HoD ➤ Resources: links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, Utube, physical resources, power point; how they should be used. Consideration needs to be given to local availability. <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>LM & PCM Watch video tutorial on how to perform various maintenance tasks (blowing, updating system and application utilities, optimisation)</p> <p>3.2 Watch a video on:</p> <p>LSI Physical controls and administrative controls https://youtu.be/NLzgcDX6rkE</p> <p>LM & PCM Maintenance tasks (blowing, updating system and application utilities, optimization https://youtu.be/J07rd4nMXeo</p> <p>3.2.1 Discuss your findings with the larger group</p> <p>3.3 Note areas that require clarification and/or contribution. <i>E.g.,</i></p> <p>LSI <i>The difference between Physical controls and administrative controls</i></p> <p>LM & PCM <i>The difference between blowing, updating system and application utilities, optimization</i></p> <p>3.4. Discuss in groups how the different activities would be carried out in both CoE and the Basic School Curriculum (BSC) to achieve the LOs and the LIs of the course manual for the lesson.</p> <p><i>E.g., Tutor tasks</i> Student teachers to individually make reflective notes on the computer maintenance so as to reference it when the need arises</p> <p>3.5 Using think-pair- share, discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed.</p> <p><i>E.g., both genders taking turns in leading roles and Inclusivity.</i></p>	
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	<p>3.6 identify any 21st century skills that can be developed or applied in the lesson and how they can help student teachers to support basic school learners to develop these skills.</p> <p><i>E.g., The use of PowerPoint, smartphones to prepare and present lessons.</i></p> <p>3.7 Read and discuss the assessment activities in the manual and identify areas in the lesson that can be used for assessment especially on NTEAP related activities.</p> <p><i>E.g., Discuss in groups the Physical controls and administrative controls using group presentations</i></p> <p>NB: Remind tutors to focus on <i>subject project and the subject portfolio of NTEAP document.</i></p> <p>3.8 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school classroom. <i>E.g., YouTube Video, Coursera, Projector, Laptop (PC)</i></p> <p>3.9. Brainstorm a plan that will be appropriate for the next lesson:</p> <p>LSI Information security controls (Physical & Administrative Controls) II</p> <p>LM & PCM Computer maintenance and optimization II</p> <p><i>Remind Tutors to have a concrete plan for teaching the next lesson for student teachers</i></p>	
<p>4. Evaluation and review of session:</p> <ul style="list-style-type: none"> ➤ Tutors should Identifying critical friends to observe lessons and report at next session 	<p>Evaluation and review of session</p> <p>4.1. Identify any outstanding issues relating to the lesson for clarification</p> <p>4.2 Identify a critical friend to sit in your class during lesson and report on observation during the next PD session</p>	<p>15 mins</p>

➤ Identifying and addressing any outstanding issues relating to the lesson/s for clarification	4.3 Read lesson 9 from the PD manual and find relevant materials for the next session.	
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Tutor PD Session		
Age Level: JHS	Name of Subject/s: 1. Laboratory Management and PC maintenance (LM & PCM) Topic: Computer maintenance and optimisation III 2. Legal and Security Issues in ICT (LSI) Topic: Legal issues (Introduction, Child & Data protection) I	
Tutor PD Session for Lesson 9 in the Course Manual		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1 Introduction to the session ➤ Review prior learning ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. NB SL/HoD should ask tutors to plan for their	Introduction to the lesson 1.1 Write down one thing you learnt in the previous PD lesson (lesson 8) and give some reflections as to how useful it was on the lessons taught. i.e., LM & PCM Computer maintenance and optimisation II LSI Information security controls (Physical & Administrative Controls) II 1.2 As a critical friend who observed Lesson 8, share your experiences and the impact on your facilitating in class 1.3 Read the introduction, lesson description and the purpose of lesson 9 in the course manual and indicate how they are related to student teachers' relevant previous knowledge.	20 mins

<p>teaching as they go through the PD session</p>	<p><i>E.g.,</i> LM & PCM <i>The purpose of this lesson is to introduce student teachers to a presentation application.</i></p> <p>LSI <i>In this lesson, student teachers will be introduced to legal issues (Child and Data protection).</i></p> <p>Distinctive Aspects</p> <p>1.4. Be in smaller groups and i. identifies the distinctive aspects of the lesson. e.g., LM & PCM MBR corruption, Boot sector corruption, System file corruption</p> <p>LSI Data protection Laws</p> <p>ii. Identify areas that need further clarification in the lesson. E.g., LM & PCM Crashes or hangs</p> <p>LSI Cyberspace Privacy</p> <p><i>NB: Remember to plan for their teaching as you go through the PD session. E.g., using Tutor-led discussion, self-prepared videos or from YouTube video to aid the lesson.</i></p>	
<p><i>As this course is dealing with supporting and or assessing the Professional Teaching Portfolio Development or the Classroom Enquiry and Action Research Project Report writing, tutors should be provided with guidance on what to do including organisation of Post Intern Seminar.</i></p>	<p>1.5 Discuss with your colleagues the development of components of the PTP and Classroom Enquiry and Action Research report writing by the student teachers. E.g.,</p> <p><i>a. Asking student teachers to provide reports from observation on learners' needs compiled in a developing professional teaching portfolio.</i> <i>b. Discussing with the student teacher additional beliefs, values and understandings regarding teaching and learning that could result in a change in a personal teaching philosophy.</i></p>	

	Refer to STS Year Three School Placement Handbook. pg. 161.	
<i>For each session remember this is the final semester before Students start teaching provide prompts to help support this transition for planning and give regard for GESI, CCI, ICT etc</i>	1.6 Identify some ways by which student teachers can integrate ICT, GESI and CCI into your teaching and learning. e.g., a. Creating videos from activities performed with learners, b. Supporting the student teacher to review their previous knowledge on SEN.	
2 Concept Development (New learning likely to arise in lesson/s): ➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors	Concept Development 2.1 Identify the concepts in lesson 9 of the course manual for discussion. I.e., LSI Cyberspace Privacy Laws and Issues, and Child Protection Laws LM & PCM Boot process issues, System file corruption, Crashes or hangs, Driver or service start-up failure 2.2 Write a possible barrier in learning the concepts (Cyberspace Privacy Laws and Issues/ Managing and Supporting basic operating systems problems) identified above for discussion. E.g., LSI <i>Some student teachers might not have had knowledge and understanding of Legal Issues.</i> LM & PCM <i>Some student teachers may have very limited skills and practice time using a computer.</i> 2.3 Identify appropriate teaching strategies that can best explain the new concepts identified. <i>E.g., Scaffolding: Providing support to students while they cannot complete a task alone. Then, when the student can complete the task alone, the teacher withdraws their support.</i>	15 mins

<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit</i> links to the Basic School Curriculum ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning ➤ Resources: <ul style="list-style-type: none"> ○ links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, Youtube, physical resources, power point; how they should be used. Consideration needs to be given to local availability ○ guidance on any power point presentations, TLM 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1. Read through the teaching and learning activities outlined in lesson 9 of the course manuals for group discussion. e.g.,</p> <p>LSI <i>Tutor guides student teachers to discuss Data protection laws (data protection Act 843).</i></p> <p>LM & PCM <i>Tutor shows a video tutorial on various operating system problems including boot process issues, Driver or service start-up failure and Logon problems.</i></p> <p>3.2 Watch the YouTube video with the link below</p> <p>LSI – General Data Protection Regulation https://youtu.be/acijNEErf-c</p> <p>LM &PCM – Optimization https://youtu.be/Q2dewZweAtU</p> <p>3.2.1 Discuss with your colleagues the video you have watched in comparison with the learning activities outlined in lesson 6 of the course manuals.</p> <p>3.3 Note areas that require clarification and/or contribution. <i>E.g.,</i></p> <p>LSI <i>Cyberspace Privacy Laws</i></p> <p>LM & PCM <i>Start-up failure and Logon problems.</i></p> <p>3.3. Discuss how the different activities would be carried out in both CoE and the Basic School Curriculum (BSC) to achieve the LOs and the LIs of the course manual for lesson 9. <i>E.g.,</i></p>	
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<p>or other resources which need to be developed to support learning</p> <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>LSI <i>Student teachers share their views on Data protection laws (data protection Act 843). Student teachers do group presentations for whole class discussions.</i></p> <p>LM &PCM <i>Student teachers individually make reflective notes on operating system problems</i></p> <p>3.4. In pairs or small groups, discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed.</p> <p>E.g., <i>Being patient with females and males who may be shy or afraid to speak.</i></p> <p>3.5 Read and discuss the assessment activities in the course manuals and identify areas in the lesson that can be used for assessment in alignment with NTEAP related activities. E.g.,</p> <p>LSI <i>Student teacher reviews Data protection laws (data protection Act 843).</i></p> <p>LM &PCM <i>Student teachers produce reflective notes on "Boot sector corruption as well as System file corruption and their fixes.</i></p> <p>Note Encourage student-teachers to work in groups (in mixed ability and pay attention to the composition of females and males during the group work).</p> <p>3.6 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school curriculum.</p> <p><i>E.g., Access to the Internet, a personal Computer, Instructional Laboratories as well as Videos</i></p>	
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	<p><i>Make sure the resources are enough and appropriate to all learners (especially people with SEN).</i></p> <p>3.7 Brainstorm a plan that will be appropriate for the next lesson:</p> <p>LSI Legal issues (Introduction, Child & Data protection) I</p> <p>LM & PCM Computer maintenance and optimisation III</p>	
<p>4. Evaluation and review of session:</p> <p>a. Tutors need to identify critical friends to observe lessons and report at next session</p> <p>b. Identifying and addressing any outstanding issues relating to the lesson/s for clarification</p>	<p>Evaluation and review of session</p> <p>4.1 Identify a critical friend to sit in your class during lesson and report on observation during the next PD session.</p> <p>4.2 Identify any outstanding issues relating to lesson 9 from the course manual for clarification</p> <p>4.3 Read lesson 10 from the PD manual and find relevant materials for the next session.</p>	15 mins

Tutor PD Session		
Age Level: JHS	Name of Subject/s: 1. Laboratory Management and PC maintenance (LM & PCM) Topic: Laboratory Configuration and Management I 2. Legal and Security Issues in ICT (LSI) Topic: Legal issues (Electronic Communications) II	
Tutor PD Session for Lesson 10		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1 Introduction to the session <ul style="list-style-type: none"> ➤ Review prior learning ➤ A critical friend to share findings for a short discussion and lessons learned ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, <p>NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. SL/HoD take feedback to gauge</p>	Introduction to the lesson 1.1 Write any new thing you learnt in the last PD session on lesson 9. LSI: Legal issues (Introduction, Child & Data protection) I LM & PCM: Computer maintenance and optimisation III 1.2 As a critical friend who observed Lesson 9, share your experiences and the impact on your facilitating in class 1.3 Read the introductory sections of lesson 10 up to the learning outcomes and their corresponding indicators individually and then discuss in pairs (mixed pairs where applicable). <i>E.g.,</i> LM & PCM LO - Install, configure/customize system and application software. LI - Install and configure operating systems & device drivers	20 mins

<p>understanding and support tutor engagement. NB SL/HoD should ask tutors to plan for their teaching as they go through the PD session</p>	<p>LSI LO - Demonstrate compliance of statutory, regulatory and institutional ICT requirements. (NTS 2b, 2c, 3b, 3c, 3d, 3e, 3h, 3i, 3k, 3n, 3p NTECF: Pillars 1, 2 & 3, crosscutting issues; Core skills, Assessment, Professional values and attitudes)</p> <p>LI - Explain the legal issues and implications associated with use of ICT.</p> <p>1.4 i. Write down one distinctive aspects of the lessons from the course manual. e.g.,</p> <p>LM & PCM <i>Electronic communication Law.</i></p> <p>LSI Laboratory configurations for teaching and learning.</p> <p>ii. Identify areas that need further clarification in the lesson. E.g.,</p> <p><i>NB: Remind tutors to plan for their teaching as they go through the PD session. E.g., using Tutor-led discussion, self-prepared videos or from YouTube video to aid the lesson.</i></p>	
<p>If this course is dealing with supporting and or assessing the Professional Teaching Portfolio Development or the Action Research Project Report writing. Tutors need to be provided with guidance on what to do including organisation of Post Internship Seminar.</p>	<p>1.5 Discuss with your colleagues the development of components of the PTP and Classroom Enquiry and Action Research report writing by the student teachers. E.g.,</p> <p><i>i. Proposing interventions for problems identified in the classroom.</i></p> <p><i>ii. Reporting (listing) activities that achieve specific standards on the NTS.</i></p>	
<p><i>For each session remember this is the final semester before Students begin teaching provide prompts to help support this transition for planning and</i></p>	<p>1.6 Identify some ways by which student teachers can integrate ICT, GESI and CCI into their teaching and learning. e.g.,</p> <p><i>i. Giving constructive/positive verbal feedback to both females and males in class.</i></p>	

<p><i>give regard for GESI, CCI, ICT etc.</i></p>	<p><i>ii. Checking to see if both the brilliant and weak learners understand the lesson.</i></p>	
<p>2 Concept Development (New learning likely to arise in lesson/s):</p> <ul style="list-style-type: none"> ➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD <p>NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors, they should take feedback to gauge understanding and support tutor engagement.</p>	<p>Concept Development</p> <p>2.1 List and share the major concepts in the lesson. <i>E.g.,</i></p> <p>LM & PCM: Laboratory configurations for teaching and learning.</p> <p>LSI: Electronic Communication (electronic communication act 775)</p> <p>2.1.1 Discuss the major concepts listed in 2.1 above</p> <p>2.2 Write two (2) possible challenges/ misconceptions in teaching the concept above for discussion.</p> <p><i>e.g., Student teachers might not have had knowledge and understanding of computer setups.</i></p> <p>2.3 Identify some appropriate teaching strategies that can be used to best explain the new concepts identified.</p> <p><i>E.g., Modelled Teaching: It is an instructional strategy that involves the tutor ‘showing’ student teachers how to do a task. The teacher shows the task while also breaking it down into small steps. This helps student teacher to see how to complete the task.</i></p>	<p>15 mins</p>
<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit</i> 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1. In pairs, watch the YouTube videos below on any internet enabled device available.</p> <p>LSI – Electronic Communication Act. https://youtu.be/YBGWK-XCAIM</p> <p>LM & PCM – Computer Laboratory Configuration https://youtu.be/3LMhibgyeg8</p>	<p>40 mins</p>

<p><i>links</i> to the Basic School Curriculum</p> <ul style="list-style-type: none"> ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning, subject specific examples should be provided for SL/HoD ➤ Resources: links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, Utube, physical resources, power point; how they should be used. Consideration needs to be given to local availability. <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>3.1.1 Discuss the content of the videos in relation to the teaching and learning activities in the course manuals.</p> <p>3.2 Note areas that require clarification and/or contribution. <i>E.g.,</i></p> <p>LSI Electronic Communication Act 775 LM &PCM Laboratory layouts</p> <p>3.3 Discuss how the different activities would be carried out in both CoE and the Basic School Curriculum (BSC) to achieve the LOs and the LIs of the course manual for lesson 1. <i>E.g.,</i></p> <p>LSI <i>Student teachers discuss Electronic Communications Laws and make group presentations for whole class discussions</i></p> <p>LM &PCM <i>Student teachers create a wiki on “advantages and disadvantages of various computer laboratory configurations.</i></p> <p>3.4. In pairs or small groups, discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed. <i>E.g., Equal representation of both gender of different ethnicity and mixed ability grouping as appropriate.</i></p> <p>3.5 Read and discuss the assessment activities in the course manuals and identify areas in the lesson that can be used for assessment especially on NTEAP related activities. <i>E.g.,</i></p> <p><i>Presentation of individual reflective notes on analysis of the videos with the links:</i></p> <p>LSI: Student teacher discusses Electronic Communications Laws and make group presentations.</p>	
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	<p>LM &PCM: <i>Student teachers create a wiki on “advantages and disadvantages of various computer laboratory configurations</i></p> <p>Note Ask student-teachers to work in groups (in mixed ability and pay attention to the composition of females and males during the group work). Student teachers may use either concept maps or multimedia for the presentations</p> <p>3.6 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school curriculum.</p> <p><i>E.g., A personal Computer, Instructional Laboratories (with multimedia equipment and smartboards), Videos</i></p> <p><i>Make sure the resources are enough and appropriate to all learners (especially people with SEN).</i></p> <p>3.7. Brainstorm a plan that will be appropriate for the next lesson:</p> <p>LSI Legal Issues (Contract) II</p> <p>LM &PCM Laboratory configuration management I</p>	
<p>4. Evaluation and review of session:</p> <ul style="list-style-type: none"> ➤ Tutors should Identifying critical friends to observe lessons and report at next session ➤ Identifying and addressing any outstanding issues relating to the lesson/s for clarification 	<p>Evaluation and review of session</p> <p>4.1 Identify a critical friend to sit in their class during lesson and report on observation during the next PD session.</p> <p>4.2 Identify any outstanding issues relating to lesson one from the course manual for clarification</p> <p>4.3 Read lesson 11 from the PD manual and find relevant materials for the next session.</p>	<p>15 mins</p>

Tutor PD Session		
Age Levels: JHS		
Name of Subject/s: 1. PC Maintenance and Laboratory Management Topic: Laboratory Configuration and Management III 2. Legal and Security Issues in ICT Topic: Legal issues (Contracts) III		
Tutor PD Session for Lesson 11		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1 Introduction to the session <ul style="list-style-type: none"> ➤ Review prior learning ➤ A critical friend to share findings for a short discussion and lessons learned ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, <p>NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. SL/HoD take</p>	Introduction to the lesson 1.1 Write any new thing you learnt in your last PD session i.e., lesson 10. LM & PCM: Laboratory Configuration and Management II LSI: Legal issues (Electronic Communications) II 1.2 As a critical friend who observed Lesson 10, share your experiences and the impact on your facilitating in class 1.3 Read the introductory sections of lesson 11 up to the learning outcomes and their corresponding indicators individually and then discuss in pairs (mixed pairs where applicable). <i>E.g.,</i> LM & PCM Student teachers will be introduced to laboratory setup/configuration. (National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d,	20 mins

<p>feedback to gauge understanding and support tutor engagement. NB SL/HoD should ask tutors to plan for their teaching as they go through the PD session</p>	<p>3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</p> <p>LSI Student teachers will be introduced to contracts under Legal Issues. (National Teachers’ Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</p> <p>1.4 i. Write down one distinctive aspect of the lessons from the course manual. e.g.,</p> <p>LM & PCM Software tools to manage computer laboratories</p> <p>LSI Law of Contract (act 25, 1960)</p> <p>ii. Identify areas that need further clarification in the lesson. E.g.,</p> <p>LM & PCM Laboratory Management</p> <p>LSI Law of Contract</p>	
<p>As this course is dealing with supporting and or assessing the Professional Teaching Portfolio Development and/or the Classroom Enquiry and Action Research Project Report writing, tutors should be provided with guidance on what to do including organisation of Post Internship Seminar.</p>	<p>1.5 Discuss with your colleagues the development of components of the PTP and Classroom Enquiry and Action Research report writing by the student teachers. E.g.,</p> <p><i>i. Reminding student teachers to keep artefacts they create as part of their portfolios</i> <i>ii. Guiding student teachers on how to develop interviews to gather data.</i></p>	
<p>For each session remember this is the final semester before Students begin teaching provide prompts to help support this transition for planning and</p>	<p>1.6 Identify some ways by which student teachers can integrate ICT, GESI and CCI into their teaching and learning. e.g.,</p> <p>i. Creating videos from activities performed with learners,</p>	

<p><i>give regard for GESI, CCI, ICT etc.</i></p>	<p>ii. Encouraging the marginalised learners to work with peers</p>	
<p>2 Concept Development (New learning likely to arise in lesson/s) :</p> <ul style="list-style-type: none"> ➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD <p>NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors, they should take feedback to gauge understanding and support tutor engagement.</p>	<p>Concept Development</p> <p>2.1 List and share the major concepts in the lesson. <i>E.g.,</i> LM & PCM Software tools</p> <p>LSI Law of Contract</p> <p>2.1.1 Discuss the major concepts listed in 2.1 above</p> <p>2.2 Write two (2) possible challenges/ misconceptions in teaching the concept above for discussion. <i>e.g.,</i></p> <p>LM & PCM Some student teachers may have very limited skill and experience using a computer</p> <p>LSI Some student teachers might not have had knowledge and understanding of legal issues and its impact on ICT.</p> <p>2.3 Identify some appropriate teaching strategies that can be used to best explain the new concepts identified.</p> <p><i>E.g., Modelled Teaching: It is an instructional strategy that involves the tutor ‘showing’ student teachers how to do a task. The teacher shows the task while also breaking it down into small steps. This helps student teacher to see how to complete the task.</i></p>	<p>15 mins</p>
<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1. Using think-pair-share, watch the YouTube videos below on any internet enabled device available.</p> <p>LSI – Electronic Communication Act. https://youtu.be/YBGWK-XCAIM</p>	<p>40 mins</p>

<ul style="list-style-type: none"> ➤ Noting opportunities for making <i>explicit links</i> to the Basic School Curriculum ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning, subject specific examples should be provided for SL/HoD ➤ Resources: links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, Utube, physical resources, power point; how they should be used. Consideration needs to be given to local availability. <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>LM &PCM – Computer Laboratory Configuration https://youtu.be/3LMhibgyeg8</p> <p>3.1.1 Discuss the content of the videos in relation to the teaching and learning activities in the course manuals.</p> <p>3.2 Note areas that require clarification and/or contribution.</p> <p><i>E.g.,</i> LSI Law of Contract</p> <p>LM &PCM Software tools to manage computer laboratory</p> <p>3.3. Discuss how the different activities would be carried out in both CoE and the Basic School Curriculum (BSC) to achieve the LOs and the LIs of the course manual for lesson 1. <i>E.g.,</i></p> <p>LSI Student teacher discusses law of contract and make group presentations for whole class discussions</p> <p>LM &PCM <i>Student teachers create a wiki on “advantages and disadvantages of various computer laboratory software.</i></p> <p>3.4. In pairs or small groups, discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed. <i>E.g., Teaching and learning resources are devoid of gender biases.</i></p> <p>3.5 Read and discuss the assessment activities in the course manuals and identify areas in the lesson that can be used for assessment especially on NTEAP related activities. <i>E.g.,</i></p> <p>LSI: Student teacher discusses law of contract and make group presentations.</p>	
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	<p>LM &PCM: <i>Student teachers create a wiki on “advantages and disadvantages of various computer laboratory software</i></p> <p>Note Ask student-teachers to work in groups (in mixed ability and pay attention to the composition of females and males during the group work). Remind student teachers to use either concept maps, or multimedia for the presentations</p> <p>3.6 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school curriculum.</p> <p><i>E.g., A personal Computer, Instructional Laboratories (with multimedia equipment and smartboards), Videos</i></p> <p><i>Make sure the resources are enough and appropriate to all learners (especially people with SEN).</i></p> <p>3.7. Brainstorm a plan that will be appropriate for the next lesson:</p> <p>LSI Legal issues (Anti-spam & privacy) IV</p> <p>LM &PCM Laboratory configuration management III</p>	
<p>4. Evaluation and review of session:</p> <ul style="list-style-type: none"> ➤ Tutors should Identifying critical friends to observe lessons and report at next session ➤ Identifying and addressing any outstanding issues relating to the lesson/s for clarification 	<p>Evaluation and review of session</p> <p>4.1 Identify a critical friend to sit in their class during lesson and report on observation during the next PD session.</p> <p>4.2 Identify any outstanding issues relating to lesson one from the course manual for clarification</p> <p>4.3 Read lesson 12 from the PD manual and find relevant materials for the next session.</p>	<p>15 mins</p>

Tutor PD Session		
Age Levels: JHS Name of Subjects: 1. Laboratory Management and PC maintenance (LM & PCM) Topic: Laboratory Configuration and Management III 2. Legal and Security Issues in ICT (LSI) Topic: Legal issues (Anti-spam & privacy) IV		
Tutor PD Session for Lesson 12 in the Course Manual		
Focus: the bullet points provide the frame for what is to be done in the session. The SWL should use the bullets to guide what they write for the SL/HoD and tutors to do and say during each session. Each bullet needs to be addressed and specific reference should be made to the course manual/s.	Guidance Notes on Tutor Activity during the PD Session. What PD Session participants (Tutors) will do during each stage of the session.	Time in session
1 Introduction to the session ➤ Review prior learning ➤ Reading and discussion of the introductory sections of the lesson up to and including learning outcomes and indicators ➤ Overview of content and identification of any distinctive aspects of the lesson/s, NB The guidance for SL/HoD should identify, address and <i>provide explanations</i> for any areas where tutors might require clarification on an aspect of the lesson. NB SL/HoD should ask tutors to plan for their teaching as they go through the PD session	Introduction to the lesson 1.1 Review and reflect on the previous PD Session (Lesson 11) and how valuable it was on lessons taught. i.e., LSI Law of contract. LM & PCM knowledge of computer laboratory management software 1.2 As a critical friend who observed Lesson 11, share your experiences and the impact on your facilitating in class 1.3 Read the introduction, lesson description and the purpose of lesson 12 in the course manual and indicate how they are related to student teachers' relevant previous knowledge	20 mins

	<p><i>E.g.,</i> LSI In this lesson, Students will be exposed to Anti-Spam and privacy under Legal issues. (National Teachers’ Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes.</p> <p>LM & PCM This lesson is to expose student teachers to Health and safety when working with computers</p> <p>Distinctive Aspects</p> <p>1.4. Pair with a colleague and i. Identify the distinctive aspects of the lesson. e.g.,</p> <p>LSI Anti-Spam Laws Privacy Vs. Civil Liberties</p> <p>LM & PCM Health Safety</p> <p>ii. Identify areas that need further clarification in the lesson. E.g., LSI The differences between Privacy and Civil Liberties Threat Actors and Exploits</p> <p>LM & PCM <i>Health and safety issues when working with computers</i></p> <p><i>NB: Plan for your teaching as you go through the PD session. E.g., using YouTube video to aid the lesson.</i></p>	
<p><i>As this course is dealing with supporting and/or assessing the Professional Teaching Portfolio Development and/or the</i></p>	<p>1.5 Discuss together the development of components of the PTP and Action Research report writing by the student teachers. E.g.,</p>	

<p>Classroom Enquiry and Action Research Project Report writing, tutors should be provided with guidance on what to do including organisation of Post Internship Seminar.</p>	<p>a. Reflecting with the student teachers their experiences from the school on issues on GESI and the use of ICT tools and how these influence their values of teaching and learning. b. Guiding the student teacher on how to collect data on learners during lesson delivery</p> <p>Refer to STS Year Three School Placement Handbook. Table 8.2.7.2 pg. 93, 115.</p>	
<p>For each session remember this is the final semester before Students start teaching provide prompts to help support this transition for planning and give regard for GESI, CCI, ICT etc</p>	<p>1.6 Identify some ways by which student teachers can integrate ICT, GESI and CCI into their teaching and learning.</p> <p>e.g., a. Recording students’ readings, b. Giving equal opportunities and treatments to all learners including the marginalised.</p>	
<p>2 Concept Development (New learning likely to arise in lesson/s):</p> <ul style="list-style-type: none"> ➤ Identification and discussion of new learning, potential barriers to learning for student teachers or students, new concepts or pedagogy being introduced in the lesson, which need to be explored with the SL/HoD <p>NB The guidance for SL/HoD should set out what they need to do to introduce and explain the issues/s with tutors</p>	<p>Concept Development</p> <p>2.1 Identify the concepts in lesson 12 from the course manuals for discussion. I.e.,</p> <p>LSI Legal issues (Anti-spam & privacy) IV</p> <p>LM & PCM Laboratory Configuration and Management III</p> <p>2.2 Write a possible barrier in learning the concepts (Access Control Fundamentals and Building/ Upgrading a computer) above for discussion.</p> <p><i>E.g.,</i> LSI <i>Some student teachers might not have had knowledge and understanding of Anti-Spam and privacy under Legal Issues and its impact on ICT</i></p> <p>LM & PCM <i>Student teachers may have had little time to Configure and Manage the ICT Laboratory</i></p> <p>2.3 Identify appropriate teaching strategies that can best explain the new concepts identified.</p>	<p>15 mins</p>

	<i>E.g., I Do, We Do, You Do method is a scaffolding strategy that provides gradual release of responsibility from the teacher to the student.</i>	
<p>3.Planning for teaching, learning and assessment activities for the lesson/s</p> <ul style="list-style-type: none"> ➤ Reading and discussion of the teaching and learning activities ➤ Noting, addressing, and explaining areas where tutors may require clarification ➤ Noting opportunities for making <i>explicit</i> links to the Basic School Curriculum ➤ Noting opportunities for integrating: GESI responsiveness and ICT and 21st C skills ➤ Reading, discussion, and identification of continuous assessment opportunities in the lesson. Each lesson should include at least two opportunities to use continuous assessment to support student teacher learning ➤ Resources: <ul style="list-style-type: none"> ○ links to the existing PD Themes, for example, action research, questioning and to other external reference material: literature, on web, Youtube, physical 	<p>Planning for teaching, learning and assessment activities</p> <p>3.1. Watch the YouTube videos with the links below.</p> <p>LSI – Anti-Spam Laws</p> <p>https://youtu.be/kM66p3owl5w</p> <p>LM &PCM – Health and safety when working with computers</p> <p>https://youtu.be/T8qGO7XQ0Uw</p> <p>3.1.1 Read through the teaching and learning activities outlined in lesson 12 from the courses manuals and relate it to the video watched for group discussion.</p> <p>3.2 Note areas that require clarification and/or contribution. <i>E.g.,</i></p> <p>LSI <i>Anti-Spam Laws Privacy Civil liberties</i></p> <p>LM &PCM Health safety</p> <p>3.3. Discuss how the different activities would be carried out in both CoE and the Basic School Curriculum (BSC) to achieve the LOs and the LIs of the course manual for lesson 3. <i>E.g.,</i></p> <p>LSI <i>Student teachers explain these concepts Anti-Spam Laws Privacy, Civil liberties</i></p> <p>LM &PCM Student teachers individually make reflective notes on “<i>risks exposed to when repairing computers and their mitigation measure</i>”</p>	

<p>resources, power point; how they should be used. Consideration needs to be given to local availability</p> <ul style="list-style-type: none"> ○ guidance on any power point presentations, TLM or other resources which need to be developed to support learning <p>Tutors should be expected to have a plan for the next lesson for student teachers</p>	<p>3.4. In pairs or small groups, discuss how GESI issues related to the teaching and learning activities of the lesson would be addressed.</p> <p><i>E.g., Paying attention to all learners, especially girls and students with Special Educational needs, ensuring their progress, NTS 3f: 1a.</i></p> <p>3.5 Read and discuss the assessment activities in the course manuals and identify areas in the lesson that can be used for assessment especially on NTEAP related activities. E.g.,</p> <p><i>Presentation of individual reflective notes on analysis of the videos with the links:</i></p> <p>LSI – Anti-Spam Laws</p> <p>https://youtu.be/kM66p3owl5w</p> <p>LM &PCM – Health and safety when working with computers</p> <p>https://youtu.be/T8qGO7XQ0Uw</p> <p>3.6 List the needed inclusive resources for the teaching and learning of the concepts identified in both CoE and basic school curriculum.</p> <p><i>E.g., A personal Computer, Instructional Laboratories (with multimedia equipment and smartboards) as well as Videos</i></p> <p><i>Make sure the resources are enough and appropriate to all learners (especially people with SEN).</i></p> <p>3.7 Brainstorm a plan that will be appropriate for the next lesson:</p> <p>LSI Legal issues (Anti-spam & privacy) IV</p> <p>LM &PCM Laboratory Configuration and Management III</p>	

<p>4. Evaluation and review of session: Identifying and addressing any outstanding issues relating to the lesson/s for clarification</p>	<p>Evaluation and review of session 4.1 Identify any outstanding issues relating to lesson 12 from the course manual for clarification</p>	<p>15 mins</p>
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**Appendix 1. Course Assessment Components, detail in the Revised NTEAP Toolkit
(Sept. 21)**

COMPONENT	SUBJECT PROJECT 1 per course per semester, individual or collaborative student teacher work.	SUBJECT PORTFOLIO 1 per course per semester, individual or collaborative student teacher work.
WHAT IS IT?	The Subject project is an assignment designed to enable student teachers to demonstrate achieving one or more of the CLOs, progress towards achieving identified NTS, development of knowledge and understanding of: the Basic School Curriculum, GESI responsiveness, using ICT and 21stC skills	The Subject Portfolio is the deliberate collection of student teachers' work that has been selected and organized for a particular subject to show student teacher's learning and progress to achieving the CLOs.
CONSTITUENTS	<p>Introduction: a clear statement of aim and purpose</p> <p>Methodology: what the student teacher has done and why to achieve the aim and purpose of the project</p> <p>Substantive or main section: Presentation of any artifacts, experiments, TLMs created for the project; presentation, analysis, and interpretation of what has been done, learned, or found out in relation to focus of the project.</p> <p>Conclusion: Statement of the key outcomes of the project; reflection on what the student teacher has learnt</p>	<p>Either 3 items of work produced during the semester or 2 items of work and a mid-semester assessment</p> <p>The items of work to be selected by student teachers, with tutor support, during the semester as best examples of their progress. For each item they select, Student teacher's need to reflect on: progress against identified NTS; achieving CLOs; increased knowledge and understanding of the Basic School Curriculum, GESI responsiveness, integration of ICT and how they could have approached developing the item differently to achieve a better outcome</p> <p>The mid-semester assessment: case study, reflective note, quiz etc.</p>
WEIGHT	<p>Overall weighting of project = 30%</p> <p>Weighting of individual parts of project out of 100</p> <ul style="list-style-type: none"> • Introduction – 10 • Methodology – 20 • Substantive section – 40 • Conclusion – 30 	<p>Overall weighting of project = 30%</p> <p>Weighting of individual parts of portfolio out of 100</p> <ul style="list-style-type: none"> • Each item of work - 30 • Mid semester assessment - 30 - <i>if applicable</i> • Presentation and organisation of portfolio - 10
EXAM	End of semester Exam, weight 40%. To assess: achievement of one or more of the CLOs, progress towards achieving identified NTS, development of knowledge and understanding of the Basic School Curriculum, ability to use	

	GESI responsive approaches and to integrate ICT and 21 st C skills in teaching and learning
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Examples of course assessment components

Subject portfolio examples of items of work

Literacy:

- o Reading log of children's literature
- o Review of different types of writing and how to teach them
- o Book summaries/reports
- o Report on different purposes for and types of reading or writing
- o Vocabulary achievement
- o Schemes of work

Mathematics:

- o Samples of problem solving with written explanations of how the problems were solved and how this can be taught
- o Charts and graphs with written explanations of how and why they were created and how this can be taught
- o Computer analyses conducted as well as use of software to teach mathematics and how effective they are
- o Use indigenous knowledge in mathematics teaching.
- o Schemes of work

Science

- o Lab reports,
- o Research reports
- o Charts, graphs created
- o Designs, TLMs, posters, worksheets
- o Integrating indigenous knowledge into science teaching
- o Schemes of work

Subject project examples

- o *Pedagogic Studies*. What are the qualities you need to develop to be a good teacher? Reflect on your personal experiences, values, and background, the NTS and the expectations of, and vision for, the B.Ed.

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