

YEAR 2

SEMESTER 1

# Four-Year B.Ed. Course Manual

## TVET - DESIGN AND REALISATION 1





The Government of Ghana



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# FOREWORD

These Initial Teacher Education course manuals were developed by a team consisting of members from Colleges of Education and four universities namely the University of Ghana, Kwame Nkrumah University of Science and Technology, University of Education, Winneba, and University for Development Studies. This team was originally constituted by the National Council for Tertiary Education (now the Ghana Tertiary Education Commission) in 2019 to support the delivery of the new B.Ed. curriculum with assistance from T-TEL and UK Aid. The revision, finalization and printing of these manuals took place in 2021 with support from T-TEL and Mastercard Foundation.

The course manuals have been produced for use as general guides for the delivery of the new four-year B.Ed. curriculum in Colleges of Education in collaboration with their affiliated universities. They are designed to support student teachers, tutors and lecturers in delivering a complete B.Ed. course for training student teachers which meet the requirements of the National Teachers' Standards, enabling them to teach effectively in basic schools.

The first section of the manuals is focused on the course information and vision for the B.Ed. curriculum. The second section presents the course details, goal for the subject or learning area, course description, key contextual factors as well as core and transferable skills and cross-cutting issues, including equity and inclusion. The third section is a list of course learning outcomes and their related learning indicators. The fourth section presents the course content which is broken down into units for each week, the topic and sub-strands and their related teaching and learning activities to achieve the learning outcomes and the teaching and learning strategies. This is followed by course assessment components in section five. Each manual contains a list of required reading and references as well as teaching and learning resources. The final section presents course related professional development for tutors and lecturers to be able to use each section of the manual.

Field instructions to guide Supported Teaching in School are integrated into the course manuals to provide the student teacher with guidance in developing teaching throughout the entire period of study to be able to meet the requirements of the National Teachers' Standards (NTS) and the National Teacher Education Curriculum Framework (NTECF). To ensure maximum benefit the course manuals should be used in addition to other resources such as the NTS, NTECF, National Teacher Education & Assessment Policy and the National Teacher Education Gender Equality and Social Inclusion (GESI) Strategy and Action Plan. This will help to ensure that student teachers learning is integrated within the wider teacher education policy framework.

Professor Mohammed Salifu Director General, Ghana Tertiary Education Commission

# ACKNOWLEDGEMENTS

The course manuals were developed through the collaborative efforts of a team of individuals from Colleges of Education, University of Ghana, Kwame Nkrumah University of Science and Technology, University of Education, Winneba and University for Development Studies. They were produced in association with the Ghana Tertiary Education Commission of the Ministry of Education, Ghana.

A participatory team approach was used to produce these sets of resources for tutors/lecturers, mentors and student teachers. We are grateful to the specialists who contributed their knowledge and expertise.

Special thanks to Professor Jophus Anamuah-Mensah - T-TEL Key Advisor, Dr. Eric Daniel Ananga T-TEL Key Advisor for Curriculum reform and Beatrice Noble-Rogers who provided key editorial, review and content input and facilitated the process of drafting and finalising the course manual.

Patricia Appiah-Boateng and Gameli Samuel Hahomene, served as typesetting and formatting coordinators and designed and produced the illustrations, tables and other graphics which appear in the pages. They spent time and effort designing and redesigning the graphic layout and producing the camera-ready copies resulting in a set of materials that are easy to use, read and reference.

Thanks also goes to all T-Tel staff members who worked to support production of these course manuals, particularly Beryl Opong-Agyei and Gideon Okai. Their frankness and co-operative attitude complimented the team is approach used to produce these manual.

We are indebted to the Ministry of Education and the Ghana Tertiary Education Commission (GTEC) for the general support and specific helpful advice provided during production of the course manuals. Recognition and thanks must go to Chief Technical Advisor for T-TEL and Policy Advisor to the National Education Reform Secretariat, Akwasi Addae-Boahene, Prof. Mohammed Salifu, the Director General of GTEC and Mr. Jerry Sarfo the coordinator for the colleges of education, who in diverse ways supported during the course manual writing workshops.

In addition to all the staff who participated visibly in the development of these materials we would like to acknowledge all those people from the many colleges of education and universities in which we have worked and who have directly or indirectly, shared their views on the curriculum with us.

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# INTRODUCTION TO COURSE MANUALS

Welcome to this B.Ed. Course manual.

Following the accreditation of the B.Ed. by the national accreditation Board with its recognition as a world class teacher education curriculum, the decision was taken to support effective implementation through the development of course manuals. The course manuals provide tutors and lecturers with the materials necessary to support teaching each of the B.Ed. courses. The manuals adhere directly to, and emphasise, the principles and standards set out in the NTS, NTECF and in the B.Ed. and will help ensure operationalising the Government's teacher education reform Policy.

The manuals serve the following purposes:

- they are the key educational agreements between the training institution and the student teachers. In this way student teachers know what the expectations are for them and for the training they will receive.
- they lay out the course outcomes, content, strategies, and assessment, thereby providing direction to and consistency in training and B.Ed. implementation among tutors across the country.
- they are explicit documents that provide other institutions with information on which to base transfer/ articulation decisions.

Specifically, they also:

- support coherent lesson planning and teaching which will enable student teachers to achieve the NTS and become good teachers who ensure all pupils' learning whilst offering tutors the flexibility for adaptation for local needs and contexts.
- Provide a lesson by lesson overview of the course, building on and developing the material in the course specifications.
- Inform tutors, student teachers and others working with student teachers about:
  1. What is to be taught and why.
  2. how it can be taught.
  3. how it should be assessed.
- Provide opportunities for student teachers to develop and apply knowledge during supported teaching in school, creating a strong bond between learning in school and in the training institution.
- Reflect the stage of student teacher development, set out in the model for progress across the four years of the B.Ed.
- Can be used as self-study tools by student teachers.
- Ensure that all information necessary to inform teacher training is in one place (serves as reference document).
- The manuals are the basis of the codes and university professional development sessions to ensure Principals, tutors, lecturers and heads of department are fully familiar with the details of: courses, outcomes, content, approaches, assessments and lessons.

Who are course manuals for:

- College of Education Tutors
- Teacher Education University Lecturers
- Student Teachers
- Mentors and Lead Mentors
- All Those with An Interested In Teacher Education.

# USING THIS MANUAL

Writers of the manuals engaged widely with colleagues in each subject area at each stage of development. Besides, writers envisaged themselves in varied contexts as they wrote, to suggest methodologies and strategies for teaching the strands which would ensure student teachers are enabled to achieve the learning outcomes. In view of our commitment to creativity, problem solving, collaboration and to lifelong learning, we expect that individual tutors will “own” their manuals and become user-developers. Lessons in the manuals will be strands for weekly Pd meetings where tutors/lecturers will situate the lessons in the contexts of their colleges and their student teachers, to maximize the benefits.

It is also expected that tutors will model the best pedagogic practices for student teachers. Key among such practices is the communication of the importance of having a personal teaching philosophy. We expect that tutors and lecturers will explicitly communicate their personal teaching philosophies to their student teachers during the first meeting of every course. In preparation for this, we suggest you set out your personal teaching philosophy and how it will be demonstrated in your teaching using, or adapting, the sample sentence introductions below.

My teaching philosophy is .....

In view of this philosophy, I will facilitate this course by/through .....

# Course Manual Writing Guide

## Resources for Course Manual Writing

- Soft copies of the CWG, New Four-Year B.Ed. Curriculum introduction
- Soft and hard copies of the course specifications for the subject for year one and two
- Soft and hard Course Manual Writing Guide (CMWG)
- Relevant subject texts

## Target Audience

- College of Education Tutors
- Teacher Education University Lecturers
- Student Teachers
- Mentors

## The purpose of course manuals

- To provide a lesson by lesson overview of the course, building on, adapting and developing the material in the course specifications
- To provide a resource to support professional development sessions for tutors/lecturers on how to plan for and teach courses from the New Four-Year B.Ed. Curriculum
- To inform tutors /lecturers, student teachers and others working with student teachers about:
  - what is to be taught and why
  - how it can be taught
  - how it should be assessed
- To support consistency in the implementation of the New Four-Year B.Ed. across institutions who train teachers
- To ensure that all **training** information on skills, processes, and other information necessary to perform the teaching task are together in one place.
- To operationalize the Teacher Education Reform Policy; the requirements of the NTS & NTECF and the Four-Year B.Ed.

## Guiding principles of course manual writing

1. They are written with the learner, the student teacher, in mind: what they will *be able* to cope with and only include what student teachers need to know, understand, be able to do and be as a basic school teacher
2. They take in to consideration the learner's, the student teacher's, context and possible barriers to, and enablers for, learning
3. They are written with the tutors /lecturers who are going to teach the course in mind. Tutors must be able to adapt and develop the plans in course manuals to fit the context they are teaching in and to support their teaching
4. They are aligned to the key principles and practices of the Teacher Education Reform Policy: the NTS, the NTECF and the New Four-Year B.Ed.
5. They are written to provide opportunities for student teachers to develop and apply knowledge during supported teaching in school
6. They are written to reflect the stage of student teacher development, set out in the model for progress in the New Four-Year B.Ed.
7. They are written to support progress in student teacher learning, including building on prior learning from the previous programme or course/s and supporting progress to the next course.
8. They are to be used as self-study tools.
9. They are written to have the following characteristics: easy to read; uses active voice and avoids jargon; uses bullet points to offset text; uses images

## What a teacher educator needs to know, understand and use to inform what they do

- The aims and structure of the education system and Education strategic Plan
- The Basic School Curriculum
- The Inclusion Policy
- The teacher education system: The National Teacher's Standards, the vision for teacher education and the core principles of the New Four-Year B.Ed.
- Andragogy, effective methods and practices for teaching adult learners
- Assessment Literacy. Assessment for, of and as learning -Educative Assessment

**Guidance for completing the course manual writing proforma: two sections**

**A. Course Information**

*Title Page*

i. Design and Realisation I

ii. The vision for the New Four-Year B.Ed. Curriculum

“To transform initial teacher education and train highly qualified, motivated new teachers who are effective, engaging and fully prepared to teach the basic school curriculum and so improve the learning outcomes and life chances of all learners they teach as set out in the National Teachers’ Standards. In doing this to instil in new teachers the Nation’s core values of honesty, integrity, creativity and responsible citizenship and to achieve inclusive, equitable, high quality education for all learners. ”

iii. Course Details: as in course specification unless important reason why not

Pre-requisite/s	TVET related subjects from WASSCE/National Certificate II (Technical)				
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Co-Requisites					
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Course Level	200	Course Code	Credit Value	3	
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**Table of contents**

Each manual will include:

1. The goal for the subject or learning area
2. Course description
3. Key contextual factors
4. Core and cross cutting issues, including equity and inclusion
5. Course Learning outcomes
6. Course content
7. Teaching and learning strategies
8. Course Assessment components
9. Reading and reference list
10. Handouts, power points and other resources for lessons
11. Plans for each lesson in the semester

**A. Course information**

**1. Goal for the Subject or Learning Area**

*Design and Realisation I* is designed to introduce the student teacher to the concepts of the design process which dates back to the medieval era. The course is also intended for the student teacher to explore the nature of relevant tools and materials use in the design process which involves the description of situations from which problems are identified and analysed to ensure that relevant designs developed through graphical expressions of sketches, illustrations to solve problems in the Technology industries.

**2. Key contextual factors**

The education system has focused on preparing students for examinations, instead of helping them to develop the relevant industry and entrepreneurial skills which could enable them function successfully in life.

**3. Course Description**

This course is designed to introduce the student teacher to the concepts, foundations and the ideals of creativity, innovation and graphical expression of solutions to solve problems the design and realisation processes.

. The course is also intended for the student teacher to explore the various situations within their environment from which they can identify the emerging problems. Through guided demonstrations and simulations the student teacher will be introduced to foundational manipulative processes/skills in the design and realisation mode for effective and efficient solution development. The topics covered are :

- Foundational history and philosophies of Design and Realization, skills in freehand sketching and rendering.
- The Design Process.
- Design Investigation and Generating Possible Solution.
- The Learning Environment
- Methods and Resources used for Teaching Design and Realization.

These areas will provide the student teacher with the understanding of the knowledge and skills of Design and Realisation which are necessary for efficient and effective solution of problems for Technology industries.

Additionally, student teachers will have firm knowledge base and understanding for designing and making decisions about alternatives solutions. It also prepares the student teacher for work (practitioner) by equipping him/her with the knowledge and skills in problem-solving, critical thinking and creativity. The student teacher is expected to cultivate interest in hands-on learning and develop responsible citizenship to appreciate the dignity of work and contribute to sustainable society. Thus, the. The course will be delivered using the following methods: Discussion, presentations (group/individual), seminar, project work/practical work, demonstrations, brainstorming, simulation, and industrial visits. The following assessment modes will be used: Examination, tests, project work, class assignments and presentations, and portfolio.

As part of the course requirements, the student teachers will be required to undertake various projects and produce artifacts. In the process of designing and producing the artifacts, the student teacher will be introduced to relevant issues of equity and inclusivity within the industry as well as the concept of greening TVET by way of considering recycling, re-designing or re-using waste.

As part of developing teaching, the student teachers are also exposed to observation in the school environment where they are to reflect on their professional practice by engaging positively with colleagues, mentors, learners and other stakeholders and build a portfolio reflecting a better understanding of the JHS learner and the learning environment showing growing comprehension and application of the concepts of inclusivity, equity, access for all learners irrespective of ability, gender or socio-economic status and cultural background. During such reflections, student teachers are to relate their knowledge acquired in Design and Realisation to the school environment. The course is designed to meet the following NTS and NTECF requirements: NTS pg. 14,c, j, 24e, f, 26 j, NTECF pg. 16, 29,33,38.

Core and transferable skills and cross cutting issues, including equity and inclusion

**Core and transferable skills:**Critical thinking, problem solving, communication skills, and use of ICT

**Cross-cutting issues:**

This can be found in the course specification. Which core and transferable skills or cross cutting issues will be applied or developed through this course? This needs to be made explicit to student teachers. Are there specific issues to do with equity and inclusion which must be addressed so that all student teachers can fully take part? For example, issues related to gender and mathematics or science.

4. Course Learning Outcomes	5. Learning indicators
<b>By the end of the course, Students teachers will be able to</b>	
CLO 1. Demonstrate knowledge and understanding of the relevant foundational history and philosophies of Design and Realization, skills in freehand sketching and rendering	1.1 Do a PowerPoint presentation on the relevant foundational history and philosophies of design and realization. 1.2. Prepare an album of some historic designs. 1.3. Make a portfolio of Freehand sketches of straight lines, plane figures, pictorial drawings of objects, tools and equipment. 1.4. Make an album of drawings showing the following rendering techniques: texture, colour, thick and thin lines, tonal shading and hatching.
CLO 2. Exhibit knowledge and skills in the design process	2.1. Prepare a design folio depicting the following: <ul style="list-style-type: none"> <li>• list of design activities,</li> <li>• design chart,</li> <li>• illustration of the design process,</li> <li>• statement of the design problem</li> <li>• statement of design brief</li> </ul>
CLO 3. Demonstrate knowledge and understanding of Design Investigation and generating possible solutions.	3.1 Prepare a design folio depicting the following: Analysis chart, analysis questions, research design and specifications. 3.2 Make a design folio on initial/ possible solutions. 3.3 Prepare a design folio depicting the following: Analysis chart, analysis questions, research design, specifications, and health and safety dimensions of a design
CLO.4. Demonstrate knowledge and understanding of the learning environment	4.1 Produce video/still pictures and report on the observation and reflections on the learning environment.

<p>CLO 5. Demonstrate knowledge and skills in the methods and resources used for teaching Design and Realization</p>	<p>5.1. Produce a portfolio of teaching resources, teaching syllabus curriculum, lesson order, scheme of work, lesson plan and information sheet.</p> <p>5.2 Student led discussion on the following methods of teaching Design and Realization:</p> <ul style="list-style-type: none"> <li>o Demonstration</li> <li>o Illustration</li> <li>o Discussion</li> <li>o Brainstorming</li> <li>o Project</li> </ul>

## 6. Course content

In the course specification. This should provide an outline of the academic and / or practical content of the course. It should be clear how this content relates to the achievement of the intended learning outcomes. The name of each unit in the course should be *briefly* set out – the name should make it clear what the unit is about.

Unit	Topic	Sub-topic (If any)	Teaching and learning activities to achieve the learning outcome
1	Foundational history and philosophies of Design and Realization, skills in freehand sketching and rendering	<p><b>Self-Introduction (If Tutor is new to the Class)</b></p> <p><b>Introduction to the Design and Realization Course Manual</b></p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul> <p><b>Relevant Previous Knowledge</b></p> <ul style="list-style-type: none"> <li>• Brief History of Design.</li> <li>• Philosophical Foundations of Design .</li> </ul>	<p>Through face-to-face interaction, Tutor/lecturer and student-teachers introduce themselves</p> <p>Tutor/Lecturer initiates discussion on the course manual emphasizing on the objectives, learning outcomes, course content and reference material</p> <p>Tutor facilitates student teachers revision of their knowledge of the lesson from pre-tertiary</p> <p>Tutor facilitates student teachers revision of previous lesson on <b><i>Interrelatedness of TVET and Social Studies</i></b></p> <p>Tutor facilitates student teachers revision of previous lesson on <b><i>Interrelatedness of TVET and Social Studies</i></b></p> <p>Teacher facilitate student teacher transition to the new lesson with the use of <b><i>'know-want to know and learnt' (KWL</i></b></p> <p>Tutor guides student teachers using shower thought discussions on the relevant foundational history and philosophies in design and realization.</p> <p>OR</p> <p>Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss history and Philosophies of Design and Realization.</p>
2	The Design Process	<p>Activities in Designing</p> <ul style="list-style-type: none"> <li>• Drawing of Design Chart</li> <li>• Illustration of Design Process</li> <li>• Situation and Brief</li> <li>• Ethics of designing</li> </ul>	<ul style="list-style-type: none"> <li>• Review students' knowledge on different places in the community around them where problems can be identified.</li> <li>• They also have seen people with special physical needs and challenges.</li> <li>• Invite two or three groups to share on what they listed as teacher writes on the</li> </ul>

			whiteboard.
3	Design Investigation and Generating Possible Solution	<ul style="list-style-type: none"> <li>• <b>Initial Solution</b></li> <li>• <b>Selecting and</b></li> <li>• <b>Development of selected solution</b></li> </ul>	<p><b>Set Induction:</b> Introduce the lesson by revising on Situation and the brief. Tutor uses <b>Interactive lecture</b> to make brief presentation on the Analysis bubble chart.</p> <p>Guide students to pose analysis questions.</p> <p>Use simulations and pre- video recordings from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to demonstrate and discuss the methods of presenting initial/possible solutions (Isometric, Oblique) with annotations.</p> <p>Tutor use interactive lecture to discuss how to protect and preserve the health of humans and the environment.</p>
4	The Learning Environment	Classroom learning environment (lecture halls, workshops, laboratories	<p>Tutor guide student teachers in groups s to take video /still pictures of the Classroom learning environment eg. lecture halls, workshops, laboratories etc.</p> <p>Tutor guide student teachers in groups to outline ways of maintaining these facilities in the classroom learning environment.</p>
5	Methods and Resources Used for Teaching Design and Realization	Institutional environment (libraries, seminar rooms, auditorium, cafeteria, etc.	<p>Set Induction by reviewing areas constituting the Institutional learning environment.</p> <p>Tutor guide student teachers in groups to take video /still pictures of the institutional learning environment eg. libraries, seminar rooms, auditorium, cafeteria, etc</p>

### **7. Course Assessment Components**

In the course specification. The NTS and the NTECF require a move away from largely examination-based assessment to strategies to enable assessment of student teachers' skills, knowledge and understanding against the learning outcomes and through these the against the NTS

- There should be a maximum of 3 assessment components per 3 credit-course; to avoid over loading student and tutors/ lecturers
- The learning outcomes to be assessed by each assessment component should be identified.
- Each assessment component should explicitly reference the NTS or aspects of the NTS it will assess.
- Each assessment component should include:
  - The category or type, for example: written, coursework or practical, teaching, examination, collaborative

- project or presentation, poster, TLM
  - The type of assessment: of, for and /or as.
  - An indication of the size of each assessment component (e.g. duration of exams, word limit of written submissions, length of presentations; whether presentations have an individual or group etc.).
  - The weighting of each assessment component should be expressed as a % of total course mark (overall in each course: 60% continuous assessment of course work, 40% examination of course work).
  - Each assessment should be manageable and relevant to supporting the student teachers' development.
- The guidance on assessing student teachers from the NTS, the NTECF the CWG and the New Four Year B.Ed. should be used.

### Summary of Assessment Methods

**Component 1:** Examination

**Assessment Type:** Assessment of Learning

**Category of Assessment:** Written Examination

**Maximum Duration:** 3 hours

Students teachers are assessed by summative examination on:

Foundational history and philosophies of Design and Realization, skills in freehand sketching and rendering.

The Design Process.

Design Investigation and Generating Possible Solution.

**Learning Outcomes Assessed:** CLO 1; CLO 2 & CLO 3; NTS pg. 14(c & j); pg. 24 (e & f); pg. 26 (j)

**Weighting:** 40%

**Component 2:** Continuous Assessment 1

**Assessment Type:** Assessment for and as Learning

**Category of Assessment:**

Student teachers assessed through **Presentations** and **Reportson:**

The Design Process

Design Investigation and Generating Possible Solution.

The Learning Environment

Methods and Resources used for Teaching Design and Realization.

**Learning Outcomes Assessed:** CLO 2; CLO 3 & CLO 4; NTS pg. 14 (b)

**Weighting:** 30%

**Component 3: Continuous Assessment 2**

Student teachers assessed through **Portfolio** and **Project Work** on:

The Design Process

Design Investigation and Generating Possible Solution.

The Learning Environment

Methods and Resources used for Teaching Design and Realization.

**Learning Outcomes Assessed:** CLO 2; CLO 3; CLO 4 & CLO ; NTS pg. 12 (a, b & c); pg. 13 (c); pg. 14 (b)

**Weighting:** 30%

### 8. Teaching and learning strategies

Detail in this section should show how the total learning hours will be used to achieve the intended learning outcomes, to provide a guide to the teaching and learning strategies to be used. Each teaching strategy should be selected as most appropriate to achieving the learning outcomes. This may include team teaching or additional tutors. As stated in the B.Ed. experiential learning and interactive teaching approaches are encouraged

Discussion, presentations (group/individual), seminar, project work/practical work, demonstrations, brainstorming, simulation, and industrial visits

### 9. Required Reading and reference list

one or two compulsory texts which must be made available to the student teachers and a SHORT list of 5 relevant references. These lists should be annotated with the key value of each text. Use APA style of writing.

Amoakohene, S.K. et al (1998). *Technical skills and drawing for teacher training Book 2 (Tools and processes and methodology)*. Accra: Unimaxin association with Macmillan Educ. Ltd. Cambridge University Press.

<p>oakohene, S.K. et al (2008). <i>Basic design and technology</i>. Accra: Unimax Macmillan Educ. Ltd.</p> <p>wler, P. &amp; Hershey, M. (1998). <i>Craft, design and technology</i>. Glasgow: Harper Collins.</p>
<p><b>10. Teaching and Learning Resources</b></p>
<p>Instructional resources required to support learning during the course e.g.: TLMs, lab and workshop equipment, videos, projectors</p>
<p>Basic Designing tools and equipment, Designing materials (sketch pad, design sheets, card boards, pens, pencils, crayons, design brushes, erasers etc.)</p>
<p><b>Course related professional development for tutors/ lecturers</b></p>
<p><b>This is not included the course manual</b> but professional development needs must be identified to ensure all tutors / lecturers are prepared to teach the course identify any specific topics or issues which may be challenging for tutors / lecturers.</p>

# LESSON 1

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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<b>Title of Lesson</b>	<b>Foundational history and Philosophies of Design and Realization, skills in freehand sketching and rendering.</b>				<b>Lesson Duration</b>	<b>180 minutes</b>	
<b>Lesson description</b>	<p>This lesson aim to help learners to understand the relevant foundational history and philosophies of Design and Realization to lay the foundation of student teachers to build capacity to identify, investigate and analyze problems around them relating to the various technical domains. Thus, it emphasizes problem-solving skills, critical thinking, creativity and interest in hands-on learning.</p> <p>This first lesson introduces student to the course learning outcomes and three 3 assessment components of the course.</p>						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	<p>Student-teachers are:</p> <ul style="list-style-type: none"> <li>Familiar with some historical / ancient designs</li> <li>They also do some sketches of objects</li> </ul>						
<b>Possible barriers to learning in the lesson</b>	<ul style="list-style-type: none"> <li>Designing and Realization not studied at the pre- tertiary level</li> <li>Tutors of Designing and Realization not having enough information on history and Philosophies of *design</li> <li>Learners may find difficulty distinguishing among three ways of presenting freehand sketches (oblique, isometric and perspective)</li> </ul>						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> <input checked="" type="checkbox"/>	<b>Practical Activity</b>	<b>Work-Based Learning</b>	<b>Seminars</b>	<b>Independent Study</b>	<b>e-learning opportunities</b> <input checked="" type="checkbox"/>	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<ul style="list-style-type: none"> <li>Use Interactive lecture to make brief presentation on the relevant foundational history and philosophies in design and realization.</li> <li>Use pre- video recordings from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss history and Philosophies of Design and Realization</li> </ul>						
<ul style="list-style-type: none"> <li><b>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	<p>The purpose of this lesson is to introduce student teachers to the relevant foundational history and philosophies in design and realization and the skills in presenting freehand sketches( Isometric, Oblique and Perspective)</p>						
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>			<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>		
	CLO 1. Demonstrate knowledge and understanding of the relevant foundational history and philosophies of Design and Realization, skills in freehand sketching and rendering.	1.1Do a PowerPoint presentation on the relevant foundational history and philosophies of design and realization. 1.2. Prepare an album of some historic designs. 2.1 Make and display sample free hand sketches			<ul style="list-style-type: none"> <li>creativity</li> <li>critical thinking</li> <li>diversity and inclusivity,</li> <li>information literacy,</li> <li>skills in sketching of objects</li> <li>skills in rendering of objects</li> </ul>		

	CLO 2. Apply the knowledge in making preliminary free hand sketches			
Topic  Foundational history and philosophies of Design and Realization, skills in freehand sketching and rendering	Topic Sub-topic	Stage/Time	Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study	
			Teacher Activity	Student Activity
	<ul style="list-style-type: none"> <li>Self-Introduction (If Tutor is new to the Class)</li> <li>Introduction to the Design and Realization Course Manual</li> <li></li> <li></li> <li>Relevant Previous Knowledge</li> </ul>	Stage 1 - 30 min	<p><b>Self-Introduction (If Tutor is new to the Class)</b> Through face-to-face interaction, Tutor and student-teachers introduce themselves</p> <p><b>Introduction to the Design and Realization Course Manual</b> Tutor initiates discussion on the course manual emphasizing on the objectives, learning outcomes, course content and reference material.</p> <p><b>Introduction</b> Tutor facilitates student teachers revision of their knowledge of the lesson from pre-tertiary through questions eg: What are some of the events that brought about the present day Design and Realisation process? Tutor facilitates student teachers revision of previous lesson on <i>Interrelatedness of TVET and Social Studies</i></p> <p>Teacher facilitate student teacher transition to the new lesson with the use of 'know-want to know and learnt' (KWL)</p>	<p><b>Self-Introduction (If Tutor is new to the Class)</b> Student-teachers do self-introduction (Tutor/Lecturers and student-teachers)</p> <p><b>Introduction to the Design and Realization Course Manual</b> Student-teachers discuss the manual and what they expect to learn after studying the course</p> <p><b>Introduction</b> Students answer questions and do brief discussions</p> <p>Student teachers use Shower thoughts to revise their knowledge and understanding gained from <i>Interrelatedness of TVET and Social Studies</i></p> <p>Student teachers fill first two columns of Know-want to know and learnt (KWL) form and share to class with respect to what they already about the topic and what they want to learn from the lesson.</p>
		<ul style="list-style-type: none"> <li>Brief History of Design.</li> <li>Philosophical Foundations of Design.</li> </ul>	Stage 2 - 60 min	<p><b>Discussion &amp; Video presentation</b> Tutor guides student teachers using shower thought discussions on the relevant foundational history and philosophies in design and realization. OR Tutor will use pre- video recordings from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss history and</p>

			Philosophies of Design and Realization	
	Characteristics of Historical Foundation	Stage 3 - 40 min	<b>Discussion &amp; Video</b> Tutor will use pre- video recordings from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss pictures of historical designs	<b>Discussion &amp; Video Presentation</b> Student teachers discuss pictures of historical designs
		Stage 4 – 40 min	<b>Group Discussion</b> Tutor guide students in groups to discuss the distinctive characteristics of historical designs.	<b>Group Discussion</b> Student teachers in groups think, pair and share on the characteristics of historical designs. student teachers in groups design and using PowerPoint, present on the distinctive characteristics of some historical designs
		Stage 5 - 10 min	Reflection . Tutor ask student teachers to reflect on the lesson by preparing albums on some historical designs using internet facilities	Students reflect on the philosophies of design and realization. Also reflect on the unique characteristics of historical designs. Students teacher illustrate their reflection in groups by preparing albums on some historical designs using the internet .
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)</b>	<p>In lesson assessment 1 Assessment type: Assessment for and as Learning</p> <p>Category of Assessment:</p> <ul style="list-style-type: none"> <li>knowledge and understanding of the relevant foundational history and philosophies of Design and Realization, skills in freehand sketching and rendering.</li> </ul> <p>Weighting (40%) Learning Outcomes assessed: LO3</p>			
	<p>In lesson assessment 1 Assessment type: Assessment for and as Learning</p> <ol style="list-style-type: none"> <li>Group presentation of albums on historical designs.CLO1</li> <li>Small Group PowerPoint presentation on characteristics of some historical designs. CLO1</li> <li>Reflection by student teachers.</li> </ol> <p>Weighting (60%) Learning Outcomes assessed: LO3</p>			
<b>Teaching Learning Resources</b>	<ol style="list-style-type: none"> <li>Computers (Laptops or PCs)</li> <li>Interactive boards</li> <li>Internet facility</li> <li>Sketch pads</li> <li>Different types of pencils</li> </ol>			
<b>Required Text (core)</b>	Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd. Fowler, P. & Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.			
<b>Additional Reading List</b>	Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic communication and technology), Accra. UnimaxFales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.			
<b>CPD Needs</b>	<ol style="list-style-type: none"> <li>Documentary Analysis and discussion on characteristics of historical designs</li> <li>Manipulating of Interactive Board</li> <li>Organising Class / group Discussions (THEME 3)</li> <li>Portfolio Building in Design and Realization</li> </ol>			

# LESSON 2

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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<b>Title of Lesson</b>	<b>Foundational history and Philosophies of Design and Realization, skills in freehand sketching and rendering.</b>			<b>Lesson Duration</b>	<b>180 minutes</b>		
<b>Lesson description</b>	The student teacher must present a design folio showing the situation and brief and show evidence of adequate research into the problem and generate ideas for the solution to the problem. The student teacher must present a design folio showing the situation and brief and show evidence of adequate research into the problem and generate ideas for the solution to the problem. The lesson will introduce the learner to the skills needed to generate the initial ideas and render them.						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	<ul style="list-style-type: none"> <li>• Student-teachers has been introduced to some historical designs</li> <li>• They are familiar with lines, curves, and colour work from the pre-tertiary.</li> </ul>						
<b>Possible barriers to learning in the lesson</b>	<ul style="list-style-type: none"> <li>• Student learners may confuse the differences among oblique, isometric and perspective drawings.</li> <li>• Difficulty in understanding the principle of Thick and Thin line technique in rendering objects.</li> </ul>						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> <input checked="" type="checkbox"/>	<b>Practical Activity</b> <input checked="" type="checkbox"/>	<b>Work-Based Learning</b>	<b>Seminars</b>	<b>Independent Study</b> <input checked="" type="checkbox"/>	<b>e-learning opportunities</b> <input checked="" type="checkbox"/>	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<ul style="list-style-type: none"> <li>a) Use Face to Face to organise Small group discussion on types of lines, plain figures,</li> <li>b) Use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss and demonstrate the methods of presenting objects in freehand sketches( Isometric, Oblique and Perspective) and types of rendering.</li> </ul>						
<ul style="list-style-type: none"> <li>• <b>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li>• <b>Write in full aspects of the NTS addressed</b></li> </ul>	<ul style="list-style-type: none"> <li>a) The purpose of this lesson is to introduce student teachers to the skills in presenting objects in freehand sketches( Isometric, Oblique and Perspective) in design and realization</li> <li>b) Also introduce skills in rendering objects in design and realization.</li> </ul>						
<ul style="list-style-type: none"> <li>• <b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li>• <b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>			<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>		
	CLO 1. Demonstrate knowledge and understanding of the relevant foundational history and philosophies of Design and Realization, skills in freehand sketching and rendering.	1.3. Make a portfolio of Freehand sketches of straight lines, plane figures, pictorial drawings of objects, tools and equipment. 1.4. Make an album of drawings showing the following rendering techniques: texture, colour, thick and thin lines, tonal shading and hatching.				<ul style="list-style-type: none"> <li>• creativity</li> <li>• critical thinking</li> <li>• diversity and inclusivity,</li> <li>• information literacy,</li> <li>• skills in sketching of objects</li> <li>• skills in rendering of objects</li> </ul>	

Topic Foundational history and Philosophies of Design and Realization, skills in freehand sketching and rendering.	Topic Sub-topic	Stage/Time	Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study	
			Teacher Activity	Student Activity
	Freehand sketching and Rendering.	Stage 1 - 15 min	Tutor facilitates student teachers revision of previous knowledge on some historical designs and types of lines, curves, and colour work from the pre-tertiary.	Student teachers answer question and do brief discussions on lines and colour wheel.
		Stage 2 - 60 min	Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss and teach skills in presenting object in freehand sketching in oblique, isometric and perspective.	<ul style="list-style-type: none"> <li>Students are guided to sketch in freehand objects in oblique, isometric and perspective.</li> <li>Students make portfolio of freehand sketches of pictorial drawings of objects, tools/ equipment</li> </ul>
		Stage 3 - 50 min	Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss techniques in rendering objects i.e. texture, colour, thick and thin lines, tonal shading and hatching.	Students are guided to render the freehand sketches of objects in oblique, isometric and perspective and present an album.
		Stage 4 - 45 min	Teacher guides students to critic the albums prepared on freehand sketches and render	Students display and critic the albums of their friends.
		Stage 5 - 10 min	Reflection and Closure.	
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)</b>	<p><b>In lesson assessment</b>  <b>Component 1 Assessment type: Assessment of Learning</b></p> <p><b>Category of Assessment:</b> quiz</p> <ol style="list-style-type: none"> <li>freehand sketches of pictorial drawings of objects, tools/ equipment</li> <li>Individual presentation of albums on freehand sketches of objects in oblique, isometric and perspective.</li> <li>Learning outcomes assessed :LO1</li> <li>Weighting (40%)</li> <li></li> </ol> <p><b>Component 2 Assessment type: Assessment for and as Learning</b>  <b>Component 2: Continuous Assessment 1</b></p> <p><b>Category of Assessment:</b>  <b>Student teachers assessed through observation and contribution to class discussions, Oral Presentations, as well as portfolio and album on the lesson:</b></p> <ol style="list-style-type: none"> <li>Students present portfolio of freehand sketches of pictorial drawings of objects, tools/ equipment CLO1</li> <li>Individual presentation of albums on freehand sketches of objects in oblique, isometric and perspective.CLO1</li> <li>Reflection by student teachers</li> </ol> <p>Learning Outcomes assessed: LO1  Weighting (60%)</p>			

<b>Teaching Learning Resources</b>	<ol style="list-style-type: none"> <li>1. Computers (Laptops or PCs)</li> <li>2. Interactive boards</li> <li>3. Internet facility</li> <li>4. Sketch pads</li> <li>5. Different types of pencils</li> <li>6. Different types of colour pencils, pens, water colours</li> </ol>
<b>Required Text (core)</b>	<p>Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd. Fowler, P. &amp; Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.</p>
<b>Additional Reading List</b>	<p>Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic communication and technology), Accra. Unimax Fales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.</p>
<b>CPD Needs</b>	<ul style="list-style-type: none"> <li>• Documentary Analysis of object in oblique, isometric and perspective.</li> <li>• Portfolio Building in Design and Realization</li> <li>• Skills in pictorial drawings</li> <li>• Skills in rendering</li> </ul>

# LESSON 3

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 <b>3</b> 4 5 6 7 8 9 10 11 12
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Title of Lesson	The Design Process						Lesson Duration	180 minutes
Lesson description	This lesson is aimed at making student teachers responsible and sensitive to problems around them. It is designed to lay the foundation for student teachers to build capacity to identify, investigate and analyze problems around them relating to the various technical domains. Thus, it emphasizes problem-solving skills, critical thinking, creativity and interest in hands-on learning.							
Previous student teacher knowledge, prior learning (assumed)	Students see problems in different places in the community around them. They also have seen people with special physical needs and challenges.							
Possible barriers to learning in the lesson	Students inability to describe situations clearly and correctly							
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face <input checked="" type="checkbox"/>	Practical Activity <input checked="" type="checkbox"/>	Work-Based Learning	Seminars	Independent Study	e-learning opportunities <input checked="" type="checkbox"/>	Practicum	
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> <li>a) Face to Face Class Discussion on design activities</li> <li>b) Practical demonstration of Preparing design folio on situation and design brief.</li> <li>c) Use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss and demonstrate the methods of preparing design folio for a project.</li> </ul>							
<ul style="list-style-type: none"> <li>• Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>• Write in full aspects of the NTS addressed</li> </ul>	<ol style="list-style-type: none"> <li>1. The purpose of this lesson is to introduce the learners to the design process</li> <li>2. Be able to identify problems in the community</li> <li>3. Be able to describe the situation</li> <li>4. State the design brief</li> <li>5. State the relevance of ethics in design</li> </ol>							
<ul style="list-style-type: none"> <li>• Learning Outcome for the lesson, picked and developed from the course specification</li> <li>• Learning indicators for each learning outcome</li> </ul>	Learning Outcomes	Learning Indicators				Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.		
	CLO 2. Exhibit knowledge and skills in the design process	2.1. Prepare a design folio depicting the following: <ul style="list-style-type: none"> <li>• list of design activities,</li> <li>• design chart,</li> <li>• illustration of the design process,</li> <li>• statement of the design problem</li> <li>• statement of design brief</li> </ul>				<ul style="list-style-type: none"> <li>• Gender and disability issues addressed</li> <li>• Child needs</li> <li>• Critical thinking, problem solving,</li> <li>• communication skills addressed through class/group discussion</li> </ul>		

Topic The Design Process	Topic Sub-topic	Stage/Time	Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study	
			Teacher Activity	Student Activity
Activities in Designing <ul style="list-style-type: none"> <li>• Drawing of Design Chart</li> <li>• Illustration of Design Process</li> <li>• Situation and Brief</li> <li>• Ethics of designing</li> </ul>	Stage 1 - 15 min	<ul style="list-style-type: none"> <li>• Review students' knowledge on different places in the community around them where problems can be identified.</li> <li>• They also have seen people with special physical needs and challenges.</li> <li>• Invite two or three groups to share on what they listed as teacher writes on the whiteboard.</li> </ul>	a) Students brainstorm in groups and list as many as possible areas in the community where they can identify problems b) Small groups share what they listed.	
	Stage 2 - 30 min	Teacher takes students through the two ways of presenting the design process or chart: Cyclical and flow chart	Students watch and draw Cyclical and flow charts of the design process on A-3 sheets	
	Stage 3 - 30 min	<ul style="list-style-type: none"> <li>• Tutor guides student-teachers to present areas identified with problems into bubble chart eg School, Hospital, Lorry park, Market,</li> <li>• Tutor guides students to prepare bubble chart for persons with special needs eg. Toddlers, amputee, aged</li> <li>• Teacher guides students to critic the bubble charts</li> </ul>	<ul style="list-style-type: none"> <li>• Student-teachers draw bubble chart for the places identified.</li> <li>• Student- teacher draw bubble chart for persons with special needs eg. Toddlers, amputee, aged</li> <li>• Student display and critic the bubble chart of their friends</li> </ul>	
	Stage 4 - 60 min	Discuss with students how to state the situation or write the problem statement in different areas and with different persons	Students teachers use think-pair share to engage each other in discussion and write problem statements	
	Stage 5 - 35 min	<ul style="list-style-type: none"> <li>• Discuss with students how to state the design brief.</li> <li>• Discuss relevance of ethics in designing stressing values of integrity and honesty</li> </ul>	<ul style="list-style-type: none"> <li>• Students use think-pair share in small groups and write design brief for different situations.</li> <li>• Student teachers engage in discussion on relevance of ethics in designing.</li> </ul>	
	Stage 6 - 10 min	Reflection and Closure.	Students assemble their sheets together to present as mini folio.	

<p><b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)</b></p>	<p><b>Component 1 Assessment type: Assessment of Learning</b></p> <p><b>Category of Assessment:</b> quiz</p> <p>1. folio on design process, bubble chart, situation and brief CLO2 2. .</p> <p>Learning outcomes assessed :LO2 Weighting (40%)</p> <p><b>Component 2 Assessment type: Assessment for and as Learning</b> <b>Component 2: Continuous Assessment 1</b></p> <p><b>Category of Assessment:</b> <b>Student teachers assessed through observation and contribution to class discussions, Oral Presentations, as well as portfolio and album on the lesson:</b></p> <p>1. Students present folio on design process, bubble chart, situation and brief CLO2 2. Reflection by student teachers.</p> <p>Learning Outcomes assessed: LO2 Weighting (60%)</p>
<p><b>Teaching Learning Resources</b></p>	<ul style="list-style-type: none"> <li>• Computers,</li> <li>• Drawing Instrument</li> <li>• Drawing Sheets</li> <li>• Sketch pads</li> <li>• Pencils</li> <li>• ruler</li> </ul>
<p><b>Required Text (core)</b></p>	<p>Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd. Fowler, P. &amp; Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.</p>
<p><b>Additional Reading List</b></p>	<p>Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic communication and technology), Accra. Unimax Fales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.</p>
<p><b>CPD Needs</b></p>	<p>a) Skills in stating situation clearly b) Skills in stating brief correctly c) Ethics in design</p>

# LESSON 4

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 <b>4</b> 5 6 7 8 9 10 11 12
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<b>Title of Lesson</b>	<b>Design Investigation and Generating Possible Solution</b>			<b>Lesson Duration</b>	180 minutes		
<b>Lesson description</b>	The student teacher must present a design folio showing the situation and brief and show evidence of adequate research into the problem and generate ideas for the solution to the problem. The lesson aims at introducing students to analysis of the problem, methods of collecting and analysing data in designing and stating of specification in designing.						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student teachers have identified places and persons with needs and described situation and stated design briefs to identified problems.						
<b>Possible barriers to learning in the lesson</b>	Difficulty in stating and describing design investigation and generating possible solutions						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> <input checked="" type="checkbox"/>	<b>Practical Activity</b>	<b>Work-Based Learning</b>	<b>Seminars</b> <input checked="" type="checkbox"/>	<b>Independent Study</b> <input checked="" type="checkbox"/>	<b>e-learning opportunities</b>	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<ul style="list-style-type: none"> <li>• <b>Face to Face Interactive lecture</b> to make brief presentation on the Analysis bubble chart</li> <li>• Guide students pose analysis questions.</li> <li>• Group discussion on methods of collecting and analysis of data</li> </ul>						
<ul style="list-style-type: none"> <li>• <b>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li>• <b>Write in full aspects of the NTS addressed</b></li> </ul>	<ol style="list-style-type: none"> <li>1. Mention the areas where analysis are done</li> <li>2. Students pose analysis questions.</li> <li>3. Use methods of collecting and analysing data in designing</li> <li>4. Students state specification to the situation</li> <li>5. Explain relevance of Analysis and Specification to the designer</li> </ol>						
<ul style="list-style-type: none"> <li>• <b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li>• <b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>			<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>		
	CLO 3. Demonstrate knowledge and understanding of Design Investigation and generating possible solutions.	Prepare a design folio depicting the following: Analysis chart, analysis questions, research design and specifications.			<ul style="list-style-type: none"> <li>• Critical thinking,</li> <li>• problem solving,</li> <li>• communication skills</li> </ul>		
<b>Topic</b>  Design Investigation and Generating Possible Solution	<b>Topic Sub-topic</b>	<b>Stage/Time</b>	<b>Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study</b>				
			<b>Teacher Activity</b>		<b>Student Activity</b>		
	Previous Knowledge	Stage 1 - 15 min	<b>Introduction:</b> Introduce the lesson by revising on Situation and the brief.eg: What is the situation of your environment? What are some of the challenges prevailing in your environment?		Engage students in lesson introduction		
	Investigation						

	<ul style="list-style-type: none"> <li>• Analysis questions</li> <li>• Design Research report</li> <li>• Specifications</li> </ul>	Stage 2 - 40 min	<b>Interactive lecture</b> Tutor uses <b>Interactive lecture</b> to make brief presentation on the Analysis bubble chart Guide students pose analysis questions.	<b>Interactive lecture</b> Students contribute to the discussion and draw bubble chart and state their analysis questions.
		Stage 3 - 60 min	Tutor uses pre-recorded video guide students in groups to discuss methods of collecting and analysing data in designing.  Tutor use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss the relevance of analysis to the designer and use guide student teachers to use the methods to investigate into the situation identified and analyse them.	Students teachers use think –pair share to engage each other in discussion and present in small groups methods of collecting and analysing data in designing. Student teachers use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss the relevance of analysis to the designer and use methods to investigate into the situation identified and analyse them.
		Stage 4 - 60 min	Tutor illustrate with <b>pre-recorded video</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss how specifications are stated and discuss its relevance to the designer.	Student teachers use <b>pre- recorded video</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss statement of specification for their situation. Student in groups discuss and present on relevance of specification
		Stage 5 - 5 min	Reflection and closure	Students reflect on the lesson through questions and answers
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)</b>	<b>Component 1 Assessment type: Assessment of Learning</b>  <b>Category of Assessment:</b> quiz a) relevance of analysis, investigation and specification. b) on Analysis, investigation and specification on the problem Learning outcomes assessed :LO3 Weighting (40%)  <b>Component 2 Assessment type: Assessment for and as Learning</b> <b>Component 2: Continuous Assessment 1</b> <b>Category of Assessment:</b> <b>Student teachers assessed through observation and contribution to class discussions, Oral Presentations, as well as portfolio and album on the lesson:</b> a) Groups discussion and presentation on relevance of analysis, investigation and specification			

	<p>b) Presentation of mini folio on Analysis, investigation and specification on the problem</p> <p>c) Reflection by student teachers</p> <p>Learning Outcomes assessed: LO3 Weighting (60%)</p>
<b>Teaching Learning Resources</b>	Drawing board, AutoCAD software, Computers, Drawing Instrument, different types of pencils, Drawing Sheets, etc.
<b>Required Text (core)</b>	<p>Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd.</p> <p>Fowler, P. &amp; Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.</p>
<b>Additional Reading List</b>	<p>Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic Communication and technology), Accra. UnimaxFales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.</p>
<b>CPD Needs</b>	<p>a) Skills in analysing situation</p> <p>b) Knowledge in research/ investigation (THEME 8)</p>

# LESSON 5

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 <b>5</b> 6 7 8 9 10 11 12
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<b>Title of Lesson</b>	<b>Design Investigation and Generating Possible Solution</b>				<b>Lesson Duration</b>	180 minutes	
<b>Lesson description</b>	The student teacher must present a design folio showing the situation and brief and show evidence of adequate research into the problem and generate ideas for the solution to the problem. The lesson aims at introducing students to skills in generating initial Solution, Selection of idea and Development of Selected idea.						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student teacher can sketch objects, tools and equipment in Freehand ( oblique, isometric and perspective) They can also render sketched objects using different techniques.						
<b>Possible barriers to learning in the lesson</b>	Students finding difficulty in applying principles of freehand sketching correctly. Difficulty in stating annotations for the initial ideas.						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> <input checked="" type="checkbox"/>	<b>Practical Activity</b>	<b>Work-Based Learning</b>	<b>Seminars</b>	<b>Independent Study</b> <input checked="" type="checkbox"/>	<b>e-learning opportunities</b>	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	Use simulations and pre- video recordings on sketches of initial and development of selected ideas Demonstrate and discuss initial and development of selected ideas Class discussion on rendering of initial and developed ideas						
<ul style="list-style-type: none"> <li><b>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	students will generate initial Solution with annotations, Selection of idea and Development of Selected idea Render the initial and development of selected ideas.						
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>		<b>Learning Indicators</b>		<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>		
	CLO 3. Demonstrate knowledge and understanding of Design Investigation and generating possible solutions.		Make a design folio on initial/ possible Solutions		<ul style="list-style-type: none"> <li>Gender and disability issues addressed</li> <li>Child needs</li> <li>Critical thinking, problem solving,</li> <li>communication skills addressed through class/group discussion</li> </ul>		
<b>Topic</b>  Design Investigation and Generating Possible Solution	<b>Topic Sub-topic</b>	<b>Stage/Time</b>	<b>Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study</b>				
			<b>Teacher Activity</b>		<b>Student Activity</b>		
	<b>Previous Knowledge</b>	Stage 1 - 15 min	<b>Introduction:</b> Introduce the lesson by talking about the previous lesson.		<b>Introduction:</b> Engage students in lesson introduction		
<b>Initial Solutions</b>	Stage 2 - 60 min	<b>Simulation &amp; Pre-Video Recording</b> Use simulations and pre- video recordings from sources		<b>Simulation &amp; Pre-Video Recording</b> Student teacher discuss and sketch initial/possible solutions and write annotations. Student select a solution for development.			

	<b>Development of selected solution</b>		(YouTube, Khan Academy, Coursera, Udemy, MOOCs) to demonstrate and discuss the methods of presenting initial/possible solutions (Isometric, Oblique) with annotations	
		Stage 3 - 60 min	Tutor use simulations and pre- video recordings from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to demonstrate and discuss development of selected ideas and writing of annotations.	Student teachers reflect on simulations and use pre- video recordings from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss and develop selected ideas with annotations.
		Stage 4 - 35 min	Tutor pre- video recordings from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to guide students to render the initial ideas and Developed ideas.	Student teachers render the initial ideas and development of selected ideas. Student teachers present mini folios on rendered Initial ideas and Developed ideas.
		Stage 5 - 10 min	Reflection and closure	Students reflect on the lesson through questions and answers
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)</b>	<p><b>Component 1 Assessment type: Assessment of Learning</b></p> <p><b>Category of Assessment:</b> quiz</p> <ul style="list-style-type: none"> <li>a) Initial ideas</li> <li>b) Development of selected idea</li> <li>c) Rendering</li> </ul> <p>Learning outcomes assessed :LO3 Weighting (40%)</p> <p><b>Component 2 Assessment type: Assessment for and as Learning</b></p> <p><b>Component 2: Continuous Assessment 1</b></p> <p><b>Category of Assessment:</b></p> <p><b>Student teachers assessed through observation and contribution to class discussions, Oral Presentations, as well as portfolio and album on the lesson:</b></p> <ul style="list-style-type: none"> <li>a) Peer assessment of the mini folios on rendered initial ideas and developed ideas</li> <li>b) Reflection by student teachers</li> </ul> <p>Learning Outcomes assessed: LO3 Weighting (60%)</p>			
<b>Teaching Learning Resources</b>	Drawing board, AutoCAD software, Computers, Drawing Instrument, different types of pencils, Drawing Sheets, etc			
<b>Required Text (core)</b>	Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd. Fowler, P. & Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.			

<b>Additional Reading List</b>	Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic Communication and technology), Accra. UnimaxFales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.
<b>CPD Needs</b>	Application of skills in freehand sketching

# LESSON 6

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 <b>6</b> 7 8 9 10 11 12
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<b>Title of Lesson</b>	Design Investigation and Generating Possible Solution		<b>Lesson Duration</b>			180 minutes	
<b>Lesson description</b>	In the process of addressing the identified problem in the environment, the student teacher must be introduced to the concept of greening TVET by way of considering recycling, re-designing or re-using waste. Students will discuss and describe the concept of greening TVET by of considering different methods of recycling, re-designing or re-using of waste.						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Students see lots of waste through the activities of designers						
<b>Possible barriers to learning in the lesson</b>	Limited knowledge in design investigation and generating possible solutions						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> <input checked="" type="checkbox"/>	<b>Practical Activity</b>	<b>Work-Based Learning</b> <input checked="" type="checkbox"/>	<b>Seminars</b>	<b>Independent Study</b>	<b>e-learning opportunities</b> <input checked="" type="checkbox"/>	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<ol style="list-style-type: none"> <li>1. Video Documentary Analysis: Watching/Listening, Describing and Connecting to real life</li> <li>2. Class / Group Discussions</li> <li>3. Group Presentations</li> </ol>						
<ul style="list-style-type: none"> <li>• Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>• Write in full aspects of the NTS addressed</li> </ul>	<ol style="list-style-type: none"> <li>1. Learners will watch and respond to a video documentary played in class on concept of greening TVET by way of considering recycling, re-designing or re-using of waste.</li> <li>2. Describe the activities involved under the following: recycling, re-designing or re-using of waste in design and realization.</li> </ol>						
<ul style="list-style-type: none"> <li>• Learning Outcome for the lesson, picked and developed from the course specification</li> <li>• Learning indicators for each learning outcome</li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>			<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>		
	CLO 3. Demonstrate knowledge and understanding of Design Investigation and generating possible solutions	Prepare a design folio depicting the following: Analysis chart, analysis questions, research design, specifications, and health and safety dimensions of a design.			<ul style="list-style-type: none"> <li>• critical thinking and problem solving,</li> <li>• diversity and inclusivity,</li> <li>• information literacy,</li> <li>• safety of people</li> <li>• safety of the environment</li> </ul>		

Topic	Topic Sub-topic	Stage/Time	Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study	
			Teacher Activity	Student Activity
Design Investigation and Generating Possible Solution	Health and Safety	Stage 1 - 15 min	<b>Previous Knowledge</b> Tutor facilitates previous knowledge of students on how the environment is being wasted through the activities of designers	<b>Previous Knowledge</b> Students contribute to discussion and take notes of important points.
		Stage 2 - 25 min	<b>Simulations &amp; Pre- video Recording</b> Use simulations and pre-video recordings from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss the methods of recycling, re-designing or re-using of waste as well as safe disposal of waste, also look at "cannibalization"	<b>Simulations &amp; Pre- video Recording</b> Student teachers use pre-video recordings from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss the methods of recycling, re-designing or re-using of waste as well as safe disposal of waste. .
		Stage 3 - 50 min	<b>Interactive Lecture &amp; Discussion</b>  Tutor use interactive lecture to discuss how to protect and preserve the health of humans and the environment. .	<b>Interactive Lecture &amp; Discussion</b>  Student teachers discuss how to protect and preserve the health of humans and the environment.
		Stage 4 - 80 min	<b>Simulations &amp; Pre- video Recording</b>  Use simulations and pre-video recordings from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss the merits of recycling, re-designing or re-using of waste as well as safe disposal of waste as concept of greening TVET.	<b>Simulations &amp; Pre- video Recording</b>  Student teachers think-pair share and present on the merits of recycling, re-designing or re-using of waste as well as safe disposal of waste as concept of greening TVET
		Stage 5 - 10 min	Reflection and Closure	
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)</b>	<p><b>Component 1 Assessment type: Assessment of Learning</b>  <b>Category of Assessment:</b> quiz  a) methods of recycling, re-designing or re-using of waste as well as safe disposal of waste  b) protection and preservation of the health of humans and the environment  Learning outcomes assessed :LO3  Weighting (40%)</p> <p><b>Component 2 Assessment type: Assessment for and as Learning</b>  <b>Component 2: Continuous Assessment 1</b>  <b>Category of Assessment:</b>  <b>Student teachers assessed through observation and contribution to class discussions, Oral Presentations, as well as portfolio and album on the lesson:</b>  a) Small group presentation on methods of recycling, re-designing or re-using of waste as well as safe disposal of waste</p>			

	<p>b) Small group presentation on protection and preservation of the health of humans and the environment</p> <p>c) Peer Assessment of Group Presentation</p> <p>d) Reflection by student teachers</p> <p>Learning Outcomes assessed: LO3 Weighting (60%)</p>
<b>Teaching Learning Resources</b>	<ol style="list-style-type: none"> <li>1. Computers (Laptops or PCs)</li> <li>2. Interactive boards</li> <li>3. Internet facility</li> </ol>
<b>Required Text (core)</b>	<p><b>Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd. Fowler, P. &amp; Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.</b></p>
<b>Additional Reading List</b>	<p><b>Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic Communication and technology), Accra. UnimaxFales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.</b></p>
<b>CPD Needs</b>	<p>Group presentation (THEME 4)</p>

# LESSON 7

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 <b>7</b> 8 9 10 11 12
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Title of Lesson	The Learning Environment				Lesson Duration	180 minutes	
<b>Lesson description</b>	Students will understand the learning environment showing growing comprehension and application of the concepts of inclusivity, equity, access for all learners irrespective of ability, gender or socio –economic status and cultural background.						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student teachers use the Classroom learning environment eg. lecture halls, workshops, laboratories						
<b>Possible barriers to learning in the lesson</b>	Limited knowledge of the teaching of Designing as a subject in the learning environment						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> <input checked="" type="checkbox"/>	<b>Practical Activity</b>	<b>Work-Based Learning</b>	<b>Seminars</b> <input checked="" type="checkbox"/>	<b>Independent Study</b>	<b>e-learning opportunities</b>	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<ul style="list-style-type: none"> <li>• <b>Face-to-face</b> Class / Group Discussions on classroom learning environment paying attention to safety, disability friendly, inclusivity and diversity</li> <li>• Group Presentations</li> <li>• Group production of videos / still pictures of the classroom learning environment.</li> </ul>						
<ul style="list-style-type: none"> <li>• <b>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li>• <b>Write in full aspects of the NTS addressed</b></li> </ul>	<ul style="list-style-type: none"> <li>• Students to produce videos / still pictures on the classroom learning environment</li> <li>• Students to build reports on the classroom learning environment</li> <li>• Students reflect and assess each other’s videos and pictures</li> </ul>						
<ul style="list-style-type: none"> <li>• <b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li>• <b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>		<b>Learning Indicators</b>		<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>		
	CLO.4. Demonstrate knowledge and understanding of the learning environment		Produce video/still pictures and report on the observation and reflections on the learning environment.		<ul style="list-style-type: none"> <li>• critical thinking and problem solving,</li> <li>• diversity and inclusivity,</li> <li>• information literacy,</li> <li>• safety of people</li> <li>• safety of the environment</li> </ul>		
<b>Topic</b> The Learning Environment	<b>Topic Sub-topic</b>	<b>Stage/Time</b>	<b>Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study</b>				
			<b>Teacher Activity</b>		<b>Student Activity</b>		
	<b>Previous Knowledge</b>	Stage 1 - 15 min	<b>Introduction</b> Set Induction by reviewing areas constituting the classroom learning environment.		<b>Introduction</b> Engage students in lesson introduction		
Classroom learning environment (lecture halls, workshops, laboratories)	Stage 2 - 45 min	<b>Group Discussion &amp; Video</b> Tutor guides student teachers in groups to take video /still pictures of the		<b>Group Discussion &amp; Video</b> Student teachers in groups take pictures of the environment paying attention to			

			Classroom learning environment eg. lecture halls, workshops, laboratories,	safety, disability friendly facilities, inclusivity and diversity.
		Stage 3 -45 min	<b>Group Discussion</b> Tutor guide student teachers in groups to discuss ways of maintaining these facilities in the classroom learning environment.	<b>Group Discussion</b> Students in their groups engage in discussion on how to maintain the classroom learning environment.
		Stage 4 - 60 min	<b>Video Presentation</b> Ask students to present their videos/ still pictures.	<b>Video Presentation</b> Students present their videos/ still pictures for peer assessment
		Stage 5 - 15 min	Reflection and closure	Students reflect on the lesson through questions and answers
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)</b>	<p><b>Component 1 Assessment type: Assessment of Learning</b></p> <p><b>Category of Assessment:</b> quiz</p> <p>c) Methods of maintaining these facilities in the classroom learning environment.</p> <p>d) protection and preservation of the classroom learning environment</p> <p>Learning outcomes assessed :LO3 Weighting (40%)</p> <p><b>Component 2 Assessment type: Assessment for and as Learning</b></p> <p><b>Component 2: Continuous Assessment 1</b></p> <p><b>Category of Assessment:</b></p> <p><b>Student teachers assessed through observation and contribution to class discussions, Oral Presentations, as well as portfolio and album on the lesson:</b></p> <p>a) Groups presentation of videos/ still pictures of the classroom learning environment ( THEME 3)</p> <p>b) Small groups presentation on Methods of maintaining the facilities in the classroom learning environment.</p> <p>c) Small groups presentation on protection and preservation of the classroom learning environment(THEME 4)</p> <p>d) Peer Assessment of Group Presentation</p> <p>Reflection by student teachers</p> <p>Learning Outcomes assessed: LO3 Weighting (60%)</p>			
<b>Teaching Learning Resources</b>	<ol style="list-style-type: none"> <li>1. Computers (Laptops or PCs)</li> <li>2. Interactive boards</li> <li>3. Internet facility</li> </ol>			
<b>Required Text (core)</b>	<p><b>Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd.</b></p> <p><b>Fowler, P. &amp; Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins..</b></p>			
<b>Additional Reading List</b>	<p><b>Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic communication and technology), Accra. Unimax</b></p> <p><b>Fales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.</b></p>			

<b>CPD Needs</b>	<ul style="list-style-type: none"><li>• Organising Class Discussions (Panel, Symposia, Debate, etc.)(THEME 3)</li><li>• Video production skills (THEME 5)</li><li>• Photography skills (THEME 5)</li></ul>
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# LESSON 8

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 <b>8</b> 9 10 11 12
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<b>Title of Lesson</b>	The Learning Environment				<b>Lesson Duration</b>	<b>3 hours</b>	
<b>Lesson description</b>	Students will understand the learning environment showing growing comprehension and application of the concepts of inclusivity, equity, access for all learners irrespective of ability, gender or socio-economic status and cultural background.						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student teachers use the Institutional environment (libraries, seminar rooms, auditorium, cafeteria, etc.)						
<b>Possible barriers to learning in the lesson</b>	Limited knowledge of the learning environment teaching design process.						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> <input checked="" type="checkbox"/>	<b>Practical Activity</b> <input checked="" type="checkbox"/>	<b>Work-Based Learning</b>	<b>Seminars</b> <input checked="" type="checkbox"/>	<b>Independent Study</b>	<b>e-learning opportunities</b> <input checked="" type="checkbox"/>	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<ul style="list-style-type: none"> <li>Face to Face Class / Group Discussions institutional learning environment paying attention to safety, disability friendly, inclusivity and diversity</li> <li>Group Presentations</li> <li>Group production of videos / still pictures of the institutional learning environment</li> </ul>						
<ul style="list-style-type: none"> <li><b>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	<ul style="list-style-type: none"> <li>Students to produce videos / still pictures on the institutional environment</li> <li>Students to build reports on the institutional environment</li> <li>Students reflect and assess each other's videos and pictures.</li> </ul>						
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>		<b>Learning Indicators</b>		<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>		
	CLO.4. Demonstrate knowledge and understanding of the learning environment.		duce video/still pictures and report on the observation and reflections on the learning environment.		<ul style="list-style-type: none"> <li>critical thinking and problem solving,</li> <li>diversity and inclusivity,</li> <li>information literacy,</li> <li>disability friendly</li> <li>safety of the environment</li> </ul>		
<b>The Learning Environment</b>	<b>Topic Sub-topic</b>	<b>Stage/Time</b>	<b>Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study</b>				
			<b>Teacher Activity</b>		<b>Student Activity</b>		
	Previous Knowledge	Stage 1-15 min	<b>Introduction</b> Review areas constituting the Institutional learning environment.		<b>Introduction</b> Engage students in lesson introduction		
Institutional environment (libraries, seminar rooms, auditorium, cafeteria, etc.)	Stage 2-45 min	<b>Group Discussion &amp; Video</b> Tutor guide student teachers in groups to take video /still pictures of the institutional learning environment eg. libraries, seminar rooms, auditorium, cafeteria, etc		<b>Group Discussion &amp; Video</b> Students teachers in groups take pictures of the environment paying attention to safety, disability friendly facilities, inclusivity and diversity.			

		Stage 3-60 min	<b>Group Discussion</b> Tutor guide student teachers in groups to discuss ways of maintaining the institutional learning environment eg. libraries, seminar rooms, auditorium, cafeteria, etc	<b>Group Discussion</b> Students in their groups will engage in brainstorming on how to maintain the institutional learning environment eg. libraries, seminar rooms, auditorium, cafeteria, etc
		Stage 4-45 min	<b>Video Presentation</b> Tutor guides student teachers to present their videos/ still pictures of the institutional learning environment eg. libraries, seminar rooms, auditorium, cafeteria,	<b>Video Presentation</b> Students present their videos/ still pictures for peer assessment
		Stage 5-15 min	<b>Closure</b> Reflection and closure	<b>Closure</b> Students reflect on the lesson through questions and answers
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)</b>	<p><b>Component 1 Assessment type: Assessment of Learning</b></p> <p><b>Category of Assessment:</b> quiz ways of maintaining the institutional learning environment eg. libraries, seminar rooms, auditorium, cafeteria, etc Learning outcomes assessed :LO4 Weighting (40%)</p> <p><b>Component 2 Assessment type: Assessment for and as Learning</b> <b>Component 2: Continuous Assessment 1</b> <b>Category of Assessment:</b> <b>Student teachers assessed through observation and contribution to class discussions, Oral Presentations, as well as portfolio and album on the lesson:</b></p> <p style="padding-left: 40px;">a) Small group videos/ still pictures of the institutional learning environment eg. libraries, seminar rooms, auditorium, cafeteria b) Peer Assessment of Group videos/ still pictures c) Reflection by student teachers</p> <p>Learning Outcomes assessed: LO4 Weighting (60%)</p>			
<b>Teaching Learning Resources</b>				
<b>Required Text (core)</b>	Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd. Fowler, P. & Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.			
<b>Additional Reading List</b>	Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic communication and technology), Accra. UnimaxFales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.			
<b>CPD Needs</b>	<ul style="list-style-type: none"> <li>• Video production on skills(THEME 1, 5)</li> <li>• Photography on skills</li> </ul>			

# LESSON 9

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 <b>9</b> 10 11 12
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Title of Lesson	Methods and Resources Used for Teaching Design and Realization				Lesson Duration	3 hours	
<b>Lesson description</b>	As part of developing teaching, the student teacher is also exposed to the foundational principles and methods of teaching Design and Realization at JHS, co-plan/co-teach with a mentor and inspire learners and others in his/her practice school to do same. In addition, the student teacher is to reflect on his/her professional practice by engaging their colleagues, mentors, learners and other stakeholders and build a portfolio reflecting understanding of the learner and the learning environment showing growing comprehension and application of the concepts of inclusivity, equity.						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student-teachers are: <ul style="list-style-type: none"> <li>Familiar with their Bed. curriculum</li> <li>They also know some teaching and learning resources (TLM).</li> </ul>						
<b>Possible barriers to learning in the lesson</b>	Limited in Designing and Realization not studied at the pre- tertiary level						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> <input checked="" type="checkbox"/>	<b>Practical Activity</b>	<b>Work-Based Learning</b>	<b>Seminars</b>	<b>Independent Study</b>	<b>e-learning opportunities</b> <input checked="" type="checkbox"/>	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	Use Face to Face <b>Interactive lecture</b> to make brief presentation on the relevant teaching and learning Resources TLM for teaching design based subjects and the JHS Curriculum. Use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss, prepare and present a Portfolio on the characteristics of the JHS teaching curriculum teaching and learning Resources TLM for teaching design based subjects.						
<ul style="list-style-type: none"> <li><b>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	The purpose of this lesson is to introduce student teachers to the relevant teaching and learning Resources TLM for teaching design based subjects and the JHS Curriculum.						
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>			<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>		
	CLO 5. Demonstrate knowledge and skills in the methods and resources used for teaching Design and Realization	5.1. Produce a portfolio of teaching resources, teaching syllabus curriculum, lesson order, scheme of work, lesson plan and information sheet			<ul style="list-style-type: none"> <li>creativity</li> <li>critical thinking</li> <li>diversity and inclusivity,</li> <li>information literacy,</li> <li>skills in sketching of objects</li> <li>skills in rendering of objects</li> </ul>		

Topic	Topic Sub-topic	Stage/Time	Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study	
			Teacher Activity	Student Activity
Methods and Resources Used for Teaching Design and Realization	Resources: JHS Curriculum, TLM for teaching design based subjects	Stage 1 - 10 min	Tutor facilitates student teachers revision of previous knowledge on BEd teaching curriculum	Student teachers answer question and do brief discussions.
		Stage 2 - 60 min	Tutor uses <b>Interactive lecture</b> to make brief presentation on the JHS teaching curriculum. OR Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss JHS teaching curriculum	Student teachers listens, contribute to discussions and write down important points.  Student teachers engage in discussions and do power point presentation on the teaching curriculum
		Stage 3 - 40 min	Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss the characteristics of the JHS teaching curriculum	Student teachers prepare and present a Portfolio on the characteristics of the JHS teaching curriculum.
		Stage 4 - 60 min	Tutor guide students in groups to discuss characteristics of the types of teaching and learning materials.	Student teachers engage in discussions and do PowerPoint presentation on characteristics of types of teaching and learning materials
		Stage 5 - 10 min	Reflection and Closure.	Students reflect on the characteristics of types of teaching and learning materials
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)	<p><b>Component 1 Assessment type: Assessment of Learning</b></p> <p><b>Category of Assessment:</b> quiz</p> <ol style="list-style-type: none"> <li>4 Characteristics of the teaching curriculum</li> <li>5 Characteristics of types of teaching and learning materials</li> <li>6 Reflection by student teachers.</li> </ol> <p><b>Learning Outcomes assessed: LO5</b> <b>Weighting (40%)</b></p> <p><b>Component 2</b> <b>Assessment Type: Assessment for and as Learning</b> <b>Component 2; Continuous Assessment 1</b> <b>Category of Assessment:</b> Student teachers assessed through observation and contributions to class discussion, Oral Presentations such as Power-Point presentations, as well as portfolio on the lesson:</p> <ol style="list-style-type: none"> <li>1 Group presentation of Portfolio on the characteristics of the teaching curriculum CLO5</li> <li>2 Small Group PowerPoint presentation on characteristics of types of teaching and learning materials CLO5</li> <li>3 Reflection by student teachers</li> </ol> <p><b>Learning Outcomes assessed: LO5</b> <b>Weighting (60%)</b></p>			

<b>Teaching Learning Resources</b>	<ul style="list-style-type: none"> <li>6. Computers (Laptops or PCs)</li> <li>7. Interactive boards</li> <li>8. Internet facility</li> </ul>
<b>Required Text (core)</b>	Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd. Fowler, P. & Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.
<b>Additional Reading List</b>	Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic Communication and Technology), Accra. Unimax Fales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.
<b>CPD Needs</b>	<ul style="list-style-type: none"> <li>e) Documentary Analysis and discussion on characteristics of teaching curriculum (THEME 3)</li> <li>f) Manipulating of Interactive Board</li> <li>g) Organising Class / group Discussions (THEME 3)</li> <li>h) Portfolio Building on types of teaching and learning materials</li> </ul>

# LESSON 10

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 <b>10</b> 11 12
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Title of Lesson	Methods and Resources Used for Teaching Design and Realization				Lesson Duration	3 hours	
<b>Lesson description</b>	As part of developing teaching, the student teacher is also exposed to the foundational principles and methods of teaching Design and Realization at JHS, co-plan/co-teach with a mentor and inspire learners and others in his/her practice school to do same. In addition, the student teacher is to reflect on his/her professional practice by engaging their colleagues, mentors, learners and other stakeholders and build a portfolio reflecting understanding of the learner and the learning environment showing growing comprehension and application of the concepts of inclusivity, equity.						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student-teachers are: <ul style="list-style-type: none"> <li>Familiar with the JHS Curriculum</li> <li>They also know characteristics of teaching and learning resources (TLM).</li> </ul>						
<b>Possible barriers to learning in the lesson</b>	<ul style="list-style-type: none"> <li>Designing and Realization not studied at the pre- tertiary level</li> </ul>						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	Face-to-face <input checked="" type="checkbox"/>	Practical Activity	Work-Based Learning	Seminars	Independent Study	e-learning opportunities <input checked="" type="checkbox"/>	Practicum
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	Use Face to Face <b>Interactive lecture</b> to make brief presentation on the relevant teaching and learning Resources: lesson order, scheme of work, job card and information Sheet. Use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss, prepare and present a Portfolio on the characteristics of the lesson order, scheme of work, job card and information sheet.						
<ul style="list-style-type: none"> <li><b>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	The purpose of this lesson is to introduce student teachers to the relevant teaching and learning Resources: characteristics of the lesson order, scheme of work, job card and information sheet						
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>			<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>		
	CLO 5. Demonstrate knowledge and skills in the methods and resources used for teaching Design and Realization	5.1. Produce a portfolio of teaching resources, teaching syllabus curriculum, lesson order, scheme of work, lesson plan, job card and information sheet			<ul style="list-style-type: none"> <li>creativity</li> <li>critical thinking</li> <li>diversity and inclusivity,</li> <li>information literacy,</li> <li>skills in preparing lesson order, scheme of work, lesson plan, job card and information sheet.</li> </ul>		

Topic	Topic Sub-topic	Stage/Time	Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study	
			Teacher Activity	Student Activity
Methods and Resources Used for Teaching Design and Realization	Resources: JHS Curriculum, TLM for teaching design based subjects	Stage 1 - 10 min	Tutor facilitates student teachers revision of previous knowledge on JHS Curriculum and Teaching and learning resources(TLM)	Student teachers answer question and do brief discussions.
		Stage 2 - 60 min	Tutor uses <b>Interactive lecture</b> to make brief presentation on the characteristics of the lesson order and the scheme of work.  OR Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss characteristics, merits and demerits of the lesson order and the scheme of work.	Student teachers listen, contribute to discussions and write down important points.  Student teachers engage in discussions and do power point presentation on characteristics, merits and demerits of the lesson order and scheme of work.
		Stage 3 - 40 min	Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss the similarities and differences between lesson order and scheme of work.	Student teachers prepare and present a Portfolio on the similarities and differences between lesson order and scheme of work.
		Stage 4 - 60 min	Tutor guide students in groups to discuss characteristics, merits and demerits of the job card and information sheet.	Student teachers engage in discussions and do PowerPoint presentation on characteristics, merits and demerits of the job card and information sheet
		Stage 5 - 10 min	Reflection and Closure.	Students reflect on the characteristics of the lesson order, scheme of work, job card and information sheet
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)</b>	<p><b>Component 1 Assessment type: Assessment of Learning</b></p> <p><b>Category of Assessment:</b> quiz</p> <ol style="list-style-type: none"> <li>Characteristics of the characteristics, merits and demerits of the lesson order and scheme of work.</li> <li>Characteristics of characteristics, merits and demerits of the job card and information sheet.</li> <li>Reflection by student teachers.</li> </ol> <p><b>Learning Outcomes assessed: LO5</b> <b>Weighting (40%)</b></p> <p><b>Component 2</b> <b>Assessment Type: Assessment for and as Learning</b></p>			

	<p><b>Component 2; Continuous Assessment 1</b></p> <p><b>Category of Assessment:</b>  Student teachers assessed through observation and contributions to class discussion, <b>Oral Presentations such as Power-Point presentations, as well as portfolio</b> on the lesson:</p> <ol style="list-style-type: none"> <li>1. Group presentation of Portfolio on the characteristics, merits and demerits of the lesson order and scheme of work CLO5</li> <li>2. Small Group PowerPoint presentation on characteristics, merits and demerits of job card and information sheet CLO5</li> <li>3. Reflection by student teachers</li> </ol> <p><b>Learning Outcomes assessed: LO5</b>  <b>Weighting (60%)</b></p>
<b>Teaching Learning Resources</b>	<ol style="list-style-type: none"> <li>1. Computers (Laptops or PCs)</li> <li>2. Interactive boards</li> <li>3. Internet facility</li> </ol>
<b>Required Text (core)</b>	<p>Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd. Fowler, P. &amp; Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.</p>
<b>Additional Reading List</b>	<p>Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic communication and technology), Accra. UnimaxFales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.</p>
<b>CPD Needs</b>	<ol style="list-style-type: none"> <li>1. Documentary Analysis and discussion on characteristics, merits and demerits of the lesson order and scheme of work</li> <li>2. Portfolio Building on characteristics, merits and demerits of job card and information sheet</li> </ol>

# LESSON 11

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 <b>11</b> 12
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Title of Lesson	Methods and Resources Used for Teaching Design and Realization					Lesson Duration	3 hours
<b>Lesson description</b>	As part of developing teaching, the student teacher is also exposed to the foundational principles and methods of teaching Design and Realization at JHS, co-plan/co-teach with a mentor and inspire learners and others in his/her practice school to do same. In addition, the student teacher is to reflect on his/her professional practice by engaging their colleagues, mentors, learners and other stakeholders and build a portfolio reflecting understanding of the learner and the learning environment showing growing comprehension and application of the concepts of inclusivity, equity.						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student-teachers are: <ul style="list-style-type: none"> <li>Familiar with the characteristics of the lesson order, scheme of work, job card and information sheet</li> </ul>						
<b>Possible barriers to learning in the lesson</b>	<ul style="list-style-type: none"> <li>Difficulty in Designing and Realization lesson methods and resources</li> </ul>						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> <input checked="" type="checkbox"/>	<b>Practical Activity</b>	<b>Work-Based Learning</b>	<b>Seminars</b>	<b>Independent Study</b>	<b>e-learning opportunities</b> <input checked="" type="checkbox"/>	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	Use Face to Face <b>Interactive lecture</b> to make brief presentation on the relevant teaching and learning Resources: lesson plan or format Use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss, prepare and present a Portfolio on the characteristics, merits and demerits of the lesson plan.						
<ul style="list-style-type: none"> <li><b>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	The purpose of this lesson is to introduce student teachers to the relevant teaching and learning Resources: characteristics of the lesson plan or format						
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>	<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>				
	CLO 5. Demonstrate knowledge and skills in the methods and resources used for teaching Design and Realization	5.1. Produce a portfolio of teaching resources, teaching syllabus curriculum, lesson order, scheme of work, lesson plan, job card and information sheet	<ul style="list-style-type: none"> <li>creativity</li> <li>critical thinking</li> <li>diversity and inclusivity,</li> <li>information literacy,</li> <li>skills in preparing lesson order, scheme of work, lesson plan, job card and information sheet.</li> </ul>				
<b>Topic</b>	<b>Topic Sub-topic</b>	<b>Stage/Time</b>	<b>Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study</b>				
			<b>Teacher Activity</b>		<b>Student Activity</b>		
Methods and Resources Used for Teaching Design and Realization	Resources: JHS Curriculum, TLM for	Stage 1 - 10 min	Tutor facilitates student teachers revision of previous knowledge on lesson order, scheme of work, lesson plan,		Student teachers answer question and do brief discussions.		

	teaching design based subjects		job card and information sheet)	
		Stage 2 - 60 min	Tutor uses <b>Interactive lecture</b> to make brief presentation on the characteristics of the lesson plan. OR Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss characteristics of the lesson plan or format.	Student teachers listen, contribute to discussions and write down important points.  Student teachers engage in discussions and do power point presentation on characteristics, of the lesson plan or format.
		Stage 3 - 40 min	Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss the, merits and demerits of the lesson plan or format.	Student teachers prepare and present a Portfolio on the merits and demerits of the lesson plan or format
		Stage 4 - 60 min	Tutor guide students in groups to prepare sample lesson plan and do peer presentation of a lesson.	Student teachers engage in preparation of sample lesson plan and do peer presentation of a lesson.
		Stage 5 - 10 min	Reflection and Closure.	Students reflect on the characteristics of the lesson plan
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)</b>	<p><b>Component 1 Assessment type: Assessment of Learning</b></p> <p><b>Category of Assessment:</b> quiz</p> <ol style="list-style-type: none"> <li>1. Characteristics, merits and demerits of the lesson plan.</li> <li>2. Reflection by student teachers.</li> </ol> <p><b>Learning Outcomes assessed: LO5</b> <b>Weighting (40%)</b></p> <p><b>Component 2</b> <b>Assessment Type: Assessment for and as Learning</b> <b>Component 2; Continuous Assessment 1</b> <b>Category of Assessment:</b> Student teachers assessed through observation and contributions to class discussion, <b>Oral Presentations such as Power-Point presentations, as well as portfolio</b> on the lesson:</p> <ol style="list-style-type: none"> <li>1. Group presentation of Portfolio on the characteristics, merits and demerits of the lesson plan. CLO5</li> <li>2. Small Group peer presentation of sample lesson plan. CLO5</li> <li>3. Reflection by student teachers</li> </ol> <p><b>Learning Outcomes assessed: LO5</b> <b>Weighting (60%)</b></p>			
<b>Teaching Learning Resources</b>	<ol style="list-style-type: none"> <li>1. Computers (Laptops or PCs)</li> <li>2. Interactive boards</li> <li>3. Internet facility</li> </ol>			
<b>Required Text (core)</b>	Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd. Fowler, P. & Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.			
<b>Additional Reading List</b>	Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic communication and technology), Accra. UnimaxFales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.			

<b>CPD Needs</b>	<ol style="list-style-type: none"><li>1. Documentary Analysis and discussion on characteristics, merits and demerits of the lesson plan.</li><li>2. Manipulating of Interactive Board</li><li>3. Organising Class / group Discussions</li><li>4. Portfolio Building on characteristics, merits and demerits of lesson plan.</li></ol>
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# LESSON 12

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1	2	3	4	5	6	7	8	9	10	11	12
<b>Title of Lesson</b>	<b>Methods and Resources Used for Teaching Design and Realization</b>						<b>Lesson Duration</b>	<b>3 hours</b>								
<b>Lesson description</b>	As part of developing teaching, the student teacher is also exposed to the foundational principles and methods of teaching Design and Realization at JHS, co-plan/co-teach with a mentor and inspire learners and others in his/her practice school to do same. In addition, the student teacher is to reflect on his/her professional practice by engaging their colleagues, mentors, learners and other stakeholders and build a portfolio reflecting understanding of the learner and the learning environment showing growing comprehension and application of the concepts of inclusivity, equity.															
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student-teachers are: <ul style="list-style-type: none"> <li>Familiar with the characteristics of the lesson plan or format</li> </ul>															
<b>Possible barriers to learning in the lesson</b>	<ul style="list-style-type: none"> <li>Designing and Realization not studied at the pre- tertiary level</li> </ul>															
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> <input checked="" type="checkbox"/>	<b>Practical Activity</b>	<b>Work-Based Learning</b>	<b>Seminars</b>	<b>Independent Study</b>	<b>e-learning opportunities</b> <input checked="" type="checkbox"/>	<b>Practicum</b>									
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	Use <b>Interactive lecture</b> to make brief presentation on the relevant teaching and learning Resources: Teaching Methods Use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss, prepare and present a Portfolio on the characteristics, merits and demerits of the Teaching Methods															
<ul style="list-style-type: none"> <li><b>Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	The purpose of this lesson is to introduce student teachers to the relevant teaching and learning Resources: characteristics of the Teaching Methods															
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>			<b>Learning Indicators</b>						<b>Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.</b>						
	CLO 5. Demonstrate knowledge and skills in the methods and resources used for teaching Design and Realization			5.2 Student led discussion on the following methods of teaching Design and Realization: <ul style="list-style-type: none"> <li>Demonstration</li> <li>Illustration</li> <li>Discussion</li> <li>Brainstorming</li> <li>Project</li> </ul>						<ul style="list-style-type: none"> <li>creativity</li> <li>critical thinking</li> <li>diversity and inclusivity,</li> <li>information literacy,</li> <li>skills in using the different methods of teaching.</li> </ul>						

Topic	Topic Sub-topic	Stage/Time	Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led, collaborative group work or independent study	
			Teacher Activity	Student Activity
Methods and Resources Used for Teaching Design and Realization	Teaching Methods	Stage 1 - 10 min	Tutor facilitates student teachers revision of previous knowledge on lesson plan.	Student teachers answer question and do brief discussions.
		Stage 2 - 60 min	Tutor uses <b>Interactive lecture</b> to make brief presentation on the types and characteristics of Teaching Methods. OR Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss characteristics of the Teaching Methods.	Student teachers listen, contribute to discussions and write down important points.  Student teachers engage in discussions and do power point presentation on characteristics, of the Teaching Methods.
		Stage 3 - 40 min	Tutor will use <b>pre- video recordings</b> from sources (YouTube, Khan Academy, Coursera, Udemy, MOOCs) to discuss the, merits and demerits of Teaching Methods	Student teachers prepare and present a Portfolio on the merits and demerits of the Teaching Methods
		Stage 4 - 60 min	Tutor guide students in groups to prepare sample lesson plan and do peer presentation of a lesson using an identified method.	Student teachers engage in preparation of sample lesson plan and do peer presentation of a lesson using an identified method.
		Stage 5 - 10 min	Reflection and Closure.	Students reflect on the characteristics of the lesson plan
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)	<p><b>Component 1 Assessment type: Assessment of Learning</b></p> <p><b>Category of Assessment:</b> quiz</p> <p>Characteristics, merits and demerits of the Teaching</p> <ol style="list-style-type: none"> <li>1. Methods.</li> <li>2. Reflection by student teachers.</li> </ol> <p><b>Learning Outcomes assessed: LO5</b></p> <p><b>Weighting (40%)</b></p> <p><b>Component 2</b></p> <p><b>Assessment Type: Assessment for and as Learning</b></p> <p><b>Component 2; Continuous Assessment 1</b></p> <p><b>Category of Assessment:</b></p> <p>Student teachers assessed through observation and contributions to class discussion, <b>Oral Presentations such as Power-Point presentations, as well as portfolio</b> on the lesson:</p> <ol style="list-style-type: none"> <li>1. Group presentation of Portfolio on the characteristics, merits and demerits of the lesson plan. CLO5</li> <li>2. Small Group peer presentation of sample lesson plan. CLO5</li> <li>3. Reflection by student teachers</li> </ol> <p><b>Learning Outcomes assessed: LO5</b></p> <p><b>Weighting (60%)</b></p>			

<b>Teaching Learning Resources</b>	<ol style="list-style-type: none"> <li>1. Computers (Laptops or PCs)</li> <li>2. Interactive boards</li> <li>3. Internet facility</li> </ol>
<b>Required Text (core)</b>	<p>Amoakohene, S.K. et al (2008). Basic design and technology. Accra: Unimax Macmillan Educ. Ltd.  Fowler, P. &amp; Hershey, M. (1998). Craft, design and technology. Glasgow: Harper Collins.</p>
<b>Additional Reading List</b>	<p>Amoakohene, S.K. et al (1998). Technical Skills and Drawing for Teacher Training Book 1 (Graphic communication and technology), Accra. Unimax  Fales, J. F. et al. (1998). Technology today and tomorrow. Peoria: Glencoe Publishing.</p>
<b>CPD Needs</b>	<ol style="list-style-type: none"> <li>1. Documentary Analysis and discussion on characteristics, merits and demerits of the Teaching Methods.</li> <li>2. Manipulating of Interactive Board</li> <li>3. Organising Class / group Discussions</li> <li>4. Portfolio Building on characteristics, merits and demerits of Teaching Methods.</li> </ol>
<b>Course Assessment</b>	<p><b>Component 1:Subject Portfolio Assessment ( overall score = 30%)</b>  <b>Selected items of students work ( 3 of them=10% each)</b></p> <ul style="list-style-type: none"> <li>• <b>Written Assignment</b></li> <li>• <b>Group Presentation</b></li> <li>• <b>Individual Presentation</b></li> <li>• <b>Midterm assessment/Quiz.....=20%</b></li> <li>• <b>Reflective Journal .....=40%</b></li> <li>• <b>Organisation of the Portfolio .....=10% (how it is presented/ organized)</b></li> </ul> <p>Weighting :30%  Assesses Learning Outcomes ; CLO 1,2,3,4,5 and 6</p> <p><b>Component 2 : Subject Project(30% overall assessment)</b>  <b>Task student teachers to design a survey instrument to collect data on their peers perception of various ATR beliefs. Should be analysed and the outcome used to create a poster to be presented during the 11<sup>th</sup> lesson.</b></p> <ul style="list-style-type: none"> <li>• Introduction; clear statement of aim and purpose.....= 10%</li> <li>• Methodology : what the student has done and why.....= 20%</li> <li>• Substantive or main sections .....= 40%</li> <li>• Conclusion..... = 30%</li> </ul> <p>Assesses Learning Outcomes ; CLO 2,3,4 and 6</p> <p><b>Component 3: End of Semester Examination..... =40%</b>  Assesses Learning Outcomes ; CLO 1,2,3,4,5 and 6</p>

