

Four-Year B.Ed. Course Manual

INTRODUCTION TO GRAPHIC COMMUNICATION









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, NTCEF, 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.

CORE WRITING TEAM

Names of writers	Subject	Names of writers	Subject
Dr. Isaac Eshun		Cletus Ngaaso	Social Studies
Dr. Anthony Baabereyir		Mohammed Adam	-
Ms. Shirley Dankwa	African Studies	Dr. Emmanuel Adjei-Boateng	-
Prof. S.Y. Annor	Agriculture	Dr. Yaw Nyadu Offei	Special Education
Dr. Salome praise Otami		Prof. Samuel Hayford	-
Dr. Samuel Frimpong		Dr. Awuni	-
Robert Quansah	Early Grade	Rev.(Dr) Nyueko Avotri	Technical Vocational
Dr. Abraham Kwadwo Okrah		Elizabeth Lani Ashong	Education and Training
Dr. Sarah Emma Eshun	English Language		
Vivian Acquaye		Michael Tsorgali	-
Felix A. Odonkor		Frnacis Donkor	-
Dr. Cecilia Esinam Agbeh		Dr. Maxwell Nyatsikor	
Ibrahim Osmanu	French	Prof. Salomey Essuman	
Dr. Kofi Adu-Boahen		Dr. Paul Kwadwo Addo	
Dr. M. Kusimi		Dr. Winston Kwame Abroampa	
Dr. Aboagye Dacosta		Mr. Kwaku Esia-Donkoh	
Mr. Alexander Otoo	Geography	Mohammed Z. Abdulmumin	Pedagogy
Dr. Yvonne A.A. Ollennu	Ghanaian	Dr. Mohammed Hafiz	Arabic
Kwasi Adomako	Language	Iddris Mohammed	
Dr. Akwasi Kwarteng Amoako-Gyampah		Mohammed Almu Mahaman	
Anitha Oforiwah AduBoahen		Murtada M. Muaz	
Gertrude Nkrumah	History	Dr M. Q. Adjahoe	Music

Prof Charles Owu-Ewie	Literacy	Prof Cosmas Mereku	
Dr. Ahmed Amihere		Prof. Reginald Ocansey	Physical Education
Zakaria Sadiq	Mathematics	Dr. Emmanuel Osei Sarpong	_
Dr. R. Addai-Mununkum		E. Kwaku Kwaa-Aidoo	ICT
Dr Charles Nyarko Annobil	RME	Victor Anyamful	
Mr. Owusu Afiriyie			
Dr. V. Ankamah-Lomotey			
Jonathan Ayelsoma Samari	Science		
Prof. Ruby Hanson			

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

C	ourse Manual Writing Guide
Res	sources 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
Tar	get Audience
•	College of Education Tutors
•	Teacher Education University Lecturers
•	, Student Teachers
•	Mentors
The	e 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.
	iding principles of course manual writing
1.	They are written with the learner, the student teacher, in mind: what they will <i>be able</i> to cope with and only include what
2.	student teachers need to know, understand, be able to do and be as a basic school teacher 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
5.	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-
0.	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
Wh	hat a teacher educator needs to know, understand and use to inform what they do
٠	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
٠	Assessment Literacy. Assessment for, of and as learning -Educative Assessment
Gui	idance for completing the course manual writing proforma: two sections
<u> </u>	A. Course Information
Titl	e Page
	i. Introduction To Graphic Communication
	ii. The vision for the New Four-Year B.Ed. Curriculum
	b transform initial teacher education and train highly qualified, motivated new teachers who are effective, engaging and
	y prepared to teach the basic school curriculum and so improve the learning outcomes and life chances of all learners they
	ch as set out in the National Teachers' Standards. In doing this to instil in new teachers the Nation's core values of honesty,
inte	egrity, creativity and responsible citizenship and to achieve inclusive, equitable, high quality education for all learners. "

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III.						n unless important reason why not
Pre-	TVET	related subje	ects	from WASS	CE/N	ational Certificate II (Technical)
requisite/s						
Co-						
Requisites		[_	1			
Course	200	Course		Credit	3	
Level		Code		Value		
Table of cont						
Each manual	-		I			
		the subject ription	ori	earning area		
		ual factors				
-			ssue	s. including	eauit	y and inclusion
		ning outcom		.,		
6. Cour	se cont	tent				
	-	nd learning st		-		
		essment com	-	nents		
	-	d reference l				
		power points			urces	for lessons
		ch lesson in rmation	the	semester		
-		e Subject or l	logi	ning Area		
					signe	d to introduce the student teacher to the concepts, foundations and
					-	s back to the medieval era. The course is also intended for the student
-				-		ines, drawing techniques and materials relevant to the foundational
	-					l industries expecially in the fields of Construction and Engineering.
		tual factors		0/		
-		-	ed d	on preparing	stuc	lents for examinations, instead of helping them to develop the relevant
industry and	entrepr	eneurial skil	ls w	hich could e	nable	e them function successfully in life.
3. Cour						
		-				t teacher to the concepts, foundations and history of the Graphic
						ra. The course is also intended for the student teacher to explore the
						d materials in the Technology industries. Through guided demonstrations
						troduced to foundational manipulative processes/skills of Graphic g industry. The topics covered are: historical foundations of Graphic
				-		als, lines and letterings used in Graphic communication. It also focussed
						geometrical shapes and forms. Also the techniques for constructing
						ctorial drawings and orthographic projections of objects.
						e understanding of various Graphic communication processes which are
	-					phic communication for effective Engineering and Building construction
					-	nowledge base and understanding for selecting appropriate graphic
communicatio	on mate	erials and ma	akin	g accurate d	ecisi	ons about the techniques and suitable views for good illustrations.
		-	-			acher for knowledge and skills in problem-solving, critical thinking and
-			-			e interest in hands-on learning and develop responsible citizenship to
	-					ainable society. Thus, the. The course will be delivered using the
						individual), seminar, project work/practical work, demonstrations,
	-					llowing assessment modes will be used: Examination, tests, project
work, class as	-					ners will be required to undertake various projects and produce effective
						n the process of doing Graphic communication, the student teacher will
						vity within the industry as well as the concept of greening TVET by way of
considering re						inty within the industry as well as the concept of greening i veri by way of
-			-	-		are also exposed to observation in the school environment where they
						ing positively with colleagues, mentors, learners and other stakeholders
		-	-	-		ing of the JHS learner and the learning environment showing growing
						clusivity, equity, access for all learners irrespective of ability, gender or
						ring such reflections, student teachers are to relate their knowledge
-		-				o the school environment. The course is designed to meet the following
NTS and NTEC	CF requ	irements: N	ГSр	g. 14,c, <u>j,</u> 24	e, f <u>,</u> 2	6 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.

 1.1 Prepare a report on the historical era which form the foundations of Graphic communication. 1.2 Present a portfolio of samples of appropriate and relevant materials used for Graphic communication. 1.3 Make a video recording(s) of theMaterials being used in Graphic Communication. 2.1 Make a video recording(s of the various tools and equipment used in Graphic communication 2.2 Exhibit knowledge, understanding and manipulative skills in the use of the various tools and equipment 2.3 Make portofolio of the various lines use in Graphic communication. Eg: main line, construction line,zig zag line and others. 2.4 Provide lettering to the drawings done using lines.eg showing upper case and lower case. 3.1 Prepare an album of Geometrical forms and shapes drawn through the manipulation of the AutoCAD software 3.2Produce a portfolio of Pictorial views namely: perspective,
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through the manipulation of the AutoCAD software 3.2Produce a portfolio of Pictorial views namely: perspective,
 isometric and oblique drawings through the manipulation of the AutoCAD software. 3.3 Produce a portfolio of Conic sections through the manipulation of the AutoCAD software. 3.4 Produce a portfolio of Orthographic projections through the manipulation of the AutoCAD software.
 4.1 Prepare an album of circles ie (concentric and eccentric) 4.2 Produce a portfolio of the construction of the various Geometrical shapes and forms eg: Triangle, Quadrilaterals, Polygons 4.3Prepare an album of the different types of Conic sections 4.4 Produce a portfolio on the construction of Plain and Diagonal scales.
 5.1 Prepare an album of the different types of surface development of Right Prisms namely: cylinder, square, rectangular, pentagonal and hexagonal. 5.2 Prepare drawings of the different types of surface development of Pyramids.
 6.1 Prepare an album of the different types of three dimension drawing or pictorial drawings : perspective, oblique and isometric drawings. 6.2 Prepare an album of the Orthographic projection in first and third angles using different artefacts.

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	Торіс	Sub-topic (If any)	Teaching and learning activities to achieve the learning outcome
1	Historical Foundations and Materials used for Graphic Communication	1. Medieval, Industrial and revolution eras of Graphic communication	Tutor guides student teachers to brainstorm on the importance of history as a foundation for the present day developments in general terms
		2. Appropriate materials used for Graphic communication	
			Tutor uses interactive lecture to present the various historical eras of Graphic communication and their importance to the student teachers
			1. Tutor present a video recording (Animation) of the various appropriate materials being used for Graphic communication.
			2.Tutor guides to student teachers to form groups to demonstrate the handling of the materials used for Graphic communication
2	Tools, equipment, lines and lettering in graphic communication	1. Tools and equipment use for Graphic communication	 1.Tutor Introduce Graphic communication tools, equipment, lines and lettering in Graphic communication to students through video presentation 2. Tutor demonstrate the uses of the various
		2.Lines use in Graphic communication	Graphic communication tools and equipment using the various lines of Graphic communication to draw objects in both two
		3.Lettering in Graphic communication	 and three dimensions. Eg plane figures and pictorial figures 3.Tutor produces a power point presentation on the strategies to make upper and lower case Lettering as used for Graphic communication.
			4.Tutor demonstrates and guides student teachers to provide lettering to the drawings developed in two and three dimension.
3	Introduction to AutoCAD to construct Geometrical shapes	1.Drawing setup	Tutor Introduce the drawing setup procedure using AutoCAD through video presentation and discussion
	and forms	2.Drawing command	Tutor demonstrates the steps involved in the drawing commands of the software through
		3.Modifying commands	overhead projection and discuss. 1.Tutor Introduce the modifying commands of the software and demonstrate the procedure step by step and explain.
		4.Multi-view drawing	Tutor presents video on the processes involved in Multi-view of the AutoCAD software and demonstrate the processes.
		5.Solid modelling	Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the solid modelling
		6.Rendering	Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid.

4	Construction of geometrical shapes and forms ie : Circles, Triangles, Quadrilaterals, Polygons, Conic sections	 Construction of circles ie : Concentric and eccentric Triangles: right angled, equilateral, isosceles and scalene. Quadrilaterals: square, rectangles, parallelogram, rhombus and kite. Polygons, 	Tutor introduce the student teachers to a general discussion about Geometrical shapes namely circles and triangles. .Tutor makes power point presentation on the techniques for the construction of various circles (concentric and eccentric) explain and lead a discussion the techniques. Tutor demonstrates the construction techniques for the different types of circular shapes Tutor leads discussion and demonstrates the techniques of constructing the various triangles, quadrilaterals and polygons.
		pentagons, hexagons, octagons, and nonagon 4 Conic sections ie :Ellipse, Parabola, Hyperbola	
		5 Plain scale and Diagonal scale	
5	Development of surfaces of Prisms and Pyramids	Diagonal scale Diagonal scale Surface development of Right prisms: 1.Cylinder, square, rectangular, triangular, 2. Surface development of Polygonal prism : Pentagonal, Hexagonal etc 3. Surface development of Cone, square, rectangle, triangle, Pentagon, and hexagonal pyramids.	 Tutor engages student teachers in a discussion on the various types of Right prisms. Tutor makes power point presentation on the techniques for the development of surfaces of cylindrical prisms. Tutor demonstrates the construction techniques for surface development. Tutor makes power point presentation on the techniques for the construction for the surface development of square, rectangular and triangular prisms. Tutor demonstrates the construction techniques for the different types of Quadrilaterals Tutor engages student teachers in a discussion on the various types of Right Pyramid. Tutor makes power point presentation on the techniques for the development of surfaces of Right Pyramid namely :cone, square and triangles
6	Pictorial Drawing and Orthographic Projection	Pictorial drawing of objects in:	 Tutor engages student teachers in a discussion on the various types of Pictorial drawing. Tutor makes power point presentation on the techniques for Isometric drawing. Explain the specific techniques involved in isometric drawing.
		lsometric view,	 3. Tutor demonstrates the construction techniques for isometric drawing. 1. Tutor makes power point presentation on the techniques for Oblique drawing

		Oblique view and	2. Explain the specific techniques involved.
			3. Tutor demonstrates the construction techniques for oblique drawing.
		Perspective drawing.	Tutor makes power point presentation on the techniques for Perspective drawing.2. Explain the specific techniques involved in Perspective drawing.3. Tutor demonstrates the construction
			techniques involved in Perspective drawing.
7.	Course Assessment Components		 Tutor makes power point presentation on the techniques for Isometric drawing. Explain the specific techniques involved in isometric drawing.
			3. Tutor demonstrates the construction
			techniques for isometric drawing.
-		-	way from largely examination-based assessment to nd understanding against the learning outcomes and
through these the aga		achers skills, knowledge a	in understanding against the learning outcomes and
		ent components per 3 cre	dit-course; to avoid over loading student and tutors/
lecturers		ient components per 5 cre	
The learning out	comes to be assessed by	each assessment componer	nt should be identified.
-	=	-	spects of the NTS it will assess.
Each assessment	component should inclu	de:	
	y or type, for example: v n, poster, TLM	vritten, coursework or prac	tical, teaching, examination, collaborative project or
	assessment: of, for and /o		
		essment component (e.g. d sentations have an individu	uration of exams, word limit of written submissions, al or group etc.).
-	-		essed as a % of total course mark (overall in each
		of course work, 40% examin	
	•		he student teachers' development.
Summary of Assessm	-	om the NTS, the NTECF the	CWG and the New Four Year B.Ed. should be used.
Component 1: Examin Assessment Type: As Category of Assessme Maximum Duration:	sessment of Learning ent: Written Examination	1	
Students teachers are	e assessed by summative	examination on:	
	ndational history, philoso		tionas the sole communicative channel for
	t, lines and lettering in g	raphic communication.	
		ometrical shapes and forms	
• Construction of g	geometrical shapes and fo	-	Quadrilaterals, Polygons & Conic sections
Weighting: 40%	augus Assassment 1		

Component 2: Continuous Assessment 1

Assessment Type: Assessment for and as Learning

Category of Assessment:

Student teachers assessed through **Presentations** and **Reports**on:

- The relevant foundational history, philosophy of Graphic communication as the sole communicative channel for technology subjects.
- Tools, equipment, lines and lettering in graphic communication.
- Introduction to AutoCAD to construct Geometrical shapes and forms.

Learning Outcomes Assessed: CLO1, CLO2, & CLO 3; NTS pg. 14 (b)

Weighting: 30%

Component 3: Continuous Assessment 2

Student teachers assessed through Portfolio and Project Work on:

- The relevant foundational history, philosophy of Graphic communication as the sole communicative channel for technology subjects.
- Construction of geometrical shapes and forms ie : Circles, Triangles, Quadrilaterals, Polygons, Conic sections
- Development of surfaces of Prisms and Pyramids.
- Pictorial Drawing and Orthographic Projection.

Learning Outcomes Assessed: CLO1, CLO 4,CLO5 & CLO 6; NTS pg. 12 (a, b & c); pg. 13 (c); pg. 14 (b) **Weighting: 3**0%

1. 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

2. 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.

Forbes, B., et al (2017). *Higher graphic communication course notes*. HarperCollins publishers.

3. Teaching and Learning Resources

Instructional resources required to support learning during the course e.g.: TLMs, lab and workshop equipment, videos, projectors

Graphic communication tools and equipment, materials (pencils, pens, drawing sheets, erasers, etc.)

Compact Disc (Audio & Video) player with a recording facility (possibly with a detached microphone) on the Medieval, Industrial and Evolutional eras of Graphic communication

Computers (Laptops or PCs) for simulations

Video Camera, LCD Projector and Screen, Tripod and Monitoring Unit (for viewing)

Course related professional development for tutors/ lecturers

This is not included the course manual 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.

Year of B.Ed. 2 Semester 1 Place of le	son in semester 1 2 3 4 5 6 7 8 9 10 11 12
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Historical Foundations and Materials Used forLesson Duration180 minutesGraphic Communication							
This course is designed to lay the historical foundation for Engineering Drawing and Building Drawing. The historical Foundation is necessary for the student teacher to appreciate the stages of development of the subject Graphic communication and the materials necessary for it. This first lesson introduces student to the course learning outcomes and three 3 assessment components of the course.							
 Student Teachers are: Aware of the fact that those in the fields of Engineering and Building use Graphic communication or illustrations to express the ideas or views they have about solution to a problem. They are also aware that the designs serve the role a communicative guide in the making of many local artifacts. 							
 Gender issues in the fact that <i>Graphic Communication is a male dominated skill area.</i> Tutors of Graphic communication may not appreciate the fact that the female who do Graphic communication most often become very successful. 							
Face-to-	Practical	Work-	Seminars	Independent			Prac
face 🗹	Activity 🗹	Based Leaning		Study	opporti	unities	ticu m
 Use Face to Face tothink, pair and share to enable students to discuss the various era of the history that form the foundation of Graphic communication in Technology today. Use demonstration to engage student identify the various appropriate and relevant materials used for Graphic communication. 							
found of the	lations of Gra e subject and e	phic commu exposure to	nication to ena	ble them form	a progres	sive conc	ept
	Graphic C This course Building C appreciat materials This first I assessme Student T • A • C • T • G • T • G • T • G • T • G • G • T • W • G Face-to- face ☑ • Use F era of today • Use d mate	Graphic Communication This course is designed Building Drawing. The Happreciate the stages of appreciate the stages of materials necessary for This first lesson introduce assessment component Student Teachers are: • Aware of the for • Aware of the for • They are also • Gender issues area. • Tutors of Grap who do Graphic • Graphic communication • Graphic communication • Ouse Face to Face to • Use Face to Face to • Ouse Face to Face to • Ouse demonstration materials used for output today. • Use demonstration materials used for output	Graphic Communication This course is designed to lay the his Building Drawing. The historical Fou appreciate the stages of development materials necessary for it. This first lesson introduces student assessment components of the course Student Teachers are: • Aware of the fact that those communication or illustrate solution to a problem. • They are also aware that the making of many local at the making of many local at the making of many local at the area. • Tutors of Graphic communication not graphic communication not munication not the fact the history that form the today. • Use Face to Face to think, pair at era of the history that form the today. • Use demonstration to engage as materials used for Graphic communication to the story that form the today.	Graphic Communication This course is designed to lay the historical foundation is necessary for it. This first lesson introduces student to the course lassessment components of the course. Student Teachers are: • Aware of the fact that those in the fields communication or illustrations to expressolution to a problem. • They are also aware that the designs set the making of many local artifacts. • Gender issues in the fact that Graphic Concarea. • Tutors of Graphic communication may newho do Graphic communication not being a vocat Face-to-face to Face tothink, pair and share to errer a of the history that form the foundation of today. • Use demonstration to engage student identify materials used for Graphic communication.	Graphic Communication This course is designed to lay the historical foundation for Engine Building Drawing. The historical Foundation is necessary for the si appreciate the stages of development of the subject Graphic commaterials necessary for it. This first lesson introduces student to the course learning outcom assessment components of the course. Student Teachers are: • Aware of the fact that those in the fields of Engineering a communication or illustrations to express the ideas or solution to a problem. • They are also aware that the designs serve the role a or the making of many local artifacts. • Gender issues in the fact that Graphic Communication is area. • Tutors of Graphic communication may not appreciate t who do Graphic communication not being a vocation for SEN stude Face-to-face Practical Work- Seminars Based Independent Study Study	Graphic Communication This course is designed to lay the historical foundation for Engineering Dra Building Drawing. The historical Foundation is necessary for the student te appreciate the stages of development of the subject Graphic communication materials necessary for it. This first lesson introduces student to the course learning outcomes and th assessment components of the course. Student Teachers are: • Aware of the fact that those in the fields of Engineering and Buildi communication or illustrations to express the ideas or views th solution to a problem. • They are also aware that the designs serve the role a communi the making of many local artifacts. • Gender issues in the fact that <i>Graphic Communication is a male area</i> . • Tutors of Graphic communication may not appreciate the fact the who do Graphic communication not being a vocation for SEN student teachers face. • Graphic communication not being a vocation for SEN student teacher of the history that form the foundation of Graphic communication to day. • Use Face to Face tothink, pair and share to enable students to discuss era of the history that form the foundation of Graphic communication today. • Use demonstration to engage student identify the various appropriate materials used for Graphic communication.	Graphic Communication Image: Communication This course is designed to lay the historical foundation for Engineering Drawing and Building Drawing. The historical Foundation is necessary for the student teacher to appreciate the stages of development of the subject Graphic communication and the materials necessary for it. This first lesson introduces student to the course learning outcomes and three 3 assessment components of the course. Student Teachers are: • Aware of the fact that those in the fields of Engineering and Building use G communication or illustrations to express the ideas or views they have solution to a problem. • They are also aware that the designs serve the role a communicative gue the making of many local artifacts. • Gender issues in the fact that Graphic Communication is a male dominate area. • Tutors of Graphic communication most often become very successful. • Graphic communication not being a vocation for SEN student teachers Face-to- Practical Work- Based Leaning Study • Use Face to Face tothink, pair and share to enable students to discuss the vario era of the history that form the foundation of Graphic communication in Technicoday. • Use demonstration to engage student identify the various appropriate and relematerials used for Graphic communication.

 Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes :By the end of the lesson, the student teacher will be able to:		Learn	ing Indicators	Identify which cross- cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.
	Demonstrate know of the historical foundations of Grap communication Demonstrate know of the handling of materials used for graphic communica	aphic fou con 1. P of a wledge mai f con r cation 1. f t		are a report on the rical era which form the lations of graphic nunication. esent a portfolio of samples propriate and relevant rials used for Graphic nunication. ake a video recording(s) of e Materials being used in aphic nunication	 Assessment skills, social skills, communication skills, reflection and honesty. critical thinking and problem solving, cultural and civic literacy, innovation and collaboration Gender issues; SEN (therapeutic); diversity and inclusivity, information literacy,
Topic Historical Foundations	Topic Sub topic Stage/Tim		Time		tivities to achieve learning delivery mode selected.
and Materials used for Graphic Communication	Sub-topic			Teacher Activity	Student Activity
Preparations for use of course manual and Pre– Learning interactions	Self-Introduction (If Tutor is new to the Class) Introduction to the Historical Foundations and Materials used for Graphic Communication Relevant Previous Knowledge	1 30 minu	ıtes	Self Introduction Through face-to-face interaction, Tutor/Lecturer and student-teachers introduce themselves Introduction of Course Manual Tutor/Lecturer initiates discussion on the course manual emphasizing on the objectives, learning outcomes, course content and reference materials Introduction of Lesson Tutor facilitates student teachers revision of their knowledge of the lesson from pre-tertiary. Tutor asks the following questions: 1. What do those in the fields of	Self Introduction Student-teachers do self- introduction (Tutor/Lecturer and student-teachers) Introduction of Course Manual Student teachers discuss the manual and what they expect to learn after studying the course Introduction of Lesson Students answer questions and do brief discussions
	Medieval , Industrial and revolution eras of			in the fields of Engineering and Building use to	

	1			,,				
Historical Foundations and Materials used for Graphic Communication	Graphic communication Appropriate materials used for Graphic communication	2 90 minutes 3 60 minutes	express their ideas or views about solutions to a problem? 2. What role does design serve in the making of many local artifacts? Interactive Lecture Tutor uses interactive lecture to present the various historical eras of Graphic Communication and their importance to the student teachers Video Presentation Tutor presents a video recording (Animation) of various materials being used for Graphic Communication. Group Demonstration Tutor guides student teachers to form groups to demonstrate the handling of the appropriate materials used for Graphic Communication . Students with special needs are considered in terms of furniture suitability and convenience . Closure Tutor summarises the	Interactive Lecture Student teachers listen, contribute to the interactive lecture and take notes of key points Video Presentation Student teachers watch the video and note down the important aspects of the animation. Group Demonstration Student teachers form groups and engage in hands-on demonstration of the uses of the various appropriate materials for Graphic Communication. Closure Student teachers listen the tutors summary to end the lesson.				
			lesson based on the key points to close .					
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)	 In lesson assessment : Assessment Type for and as learning Category of Assessment : Individual presentation of portfolio on the historical foundations of Graphic communication. 							
Tooshing Looming	 Learning outcome assessed : CLO 1 Group presentation of the identification and uses of the various appropriate materials for Graphic communication. Learning outcome assessed : CLO 1 							
Teaching Learning Resources	detached micr							

	 Computers (Laptops or PCs) for playing back MP3 and MP4 files. Video Camera, LCD Projector and Screen, Tripod and Monitoring Unit (for listening and recording and viewing).
Required Text (core)	 Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 1 (Tools and processes and methodology). Accra Unimax Forbes, B., et al (2017). Higher graphic communication course notes. HarperCollins publishers.
Additional Reading List	 Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 2 (Tools and processes and methodology). Accra Unimax Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers.
CPD Needs	Team teaching, ICT skills, Brainstorming and Critical analysis

Year of B.Ed.	2	Semeste	r 1	Place of	lesson in sen	nester	1 2 3 4 5 6 7	8 9 10 11 12		
Title of Lesson			Tools, equipment, lines and lettering in graphic Lesson 180 minutes							
Lesson description			communicationDurationThis Lesson is designed to introduce student teachers to the knowledge and identity							
Lesson description			-				unication. The to			
			•			•	e and skills of Gr			
			-			-	ering that serve	•		
				raphic comr	• •		0			
Previous student		Student 1	Feachers are	e:						
teacher knowledge	2,	• /	Aware of t	he fact that	t those in t	he fields of	f Engineering ar	nd Building use		
prior learning (assu	umed)	9	specific too	ls and equip	ment to exp	ress their id	eas or views gra	phically.		
Possible barriers to		• @	Gender issue	es in the fac	t that <i>Graph</i>	nic Communi	ication is a male	dominated skill		
learning in the less	on	-	irea.							
				•		• • • •	reciate the fact			
			•				ome very succes	sful.		
					-		udent teachers			
Lesson Delivery – c		Face-	Practical	Work-	Seminars	Independe	-	Practicum		
to support student		to-face ☑	Activity ☑	Based Learning		Study 🗹	opportunit 团	les		
achieving the outco Lesson Delivery –					the such tests	onable stud		identify and		
mode of delivery c					-		lent teachers to Graphic commun			
-	tudent						lescribe the appr			
teachers in achievi			•	•	•	nmunicatior		opriate uses of		
learning outcomes	-			•	•		demonstrate the	various tools		
U U				•			ree dimension c			
				sing upper a	-			,		
			-							
		• Use E	E Learning C	Opportunitie	s to organis	e group disc ı	ussion s to get st	udent teachers		
				-		in the use of	tools, equipme	nt, Lines and		
		Lette	ring for Gra	phic commu	unication.					
Purpose for		The	urpace of t	bic losses :-	to introduce	o ctudoct t-	achora to the are	a of tools		
lesson, what want the stude	•		•				achers to the us cation for effect			
achieve, serve			ubject.	s and lettern	ing in Grapi			ive learning of		
basis for	the	the s	ubject.							
	comes.									
-	anded									
version of	the									
description.										
• Write in full a	spects									
of the	NTS									
addressed										

 Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcom end of the lesson student teacher to:	, the	Learning Indicators	Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.	
	Demonstrate knc the various tools equipment use fo communication	and	2.1 Make a video recording the various tools and equipment used in Graphic communication		
	Demonstrate knowledge of the manipulative skills of the various tools and equipment use for Graphic communication		2.2 Exhibit knowledge, understanding and manipulative skills in the us the various tools and equipment	 and honesty. critical thinking and problem solving, cultural and civic literacy, innovation and collaboration 	
	Demonstrate kno the lines use in G communication Demonstrate kno the manipulative lettering in Grap communication	raphic wledge of skills of	2.3 Make portofolio of the various lines use in Graphic communication. Eg: main li construction line, zig zag lin and others. Provide lettering to the drawings done using lines. showing upper case and low case.	se SEN (therapeutic); e diversity and inclusivity, • information literacy,	
Topic Tools, equipment, lines and lettering in	Topic Sub-topic Stage/Time		Teaching and learning activities to achieve learn outcomes: depending on delivery mode select Teacher led, collaborative group work independent study		
graphiccommunication	Previous Knowledge 1. Tools and equipment use	1 10 minutes	Teacher Activity Introduction Tutor Introduce Graphic communication tools, equipment, lines and lettering in Graphic communication to students based on their previous knowledge	Student Activity Introduction Student teachers participate by carefully observing the tools, equipment, brainstorming by their contributions.	
	for Graphic communication	2 80 minutes	Demonstration & Discussion Tutor demonstrate the	Demonstration & Discussion Student teachers observe	

	2.Lines use in Graphic communication		uses of the various Graphic communication tools and equipment using the various lines of Graphic communication to draw objects in both two and three dimensions. Eg plane figures and pictorial figures	the tutors demonstration and practice the same.		
	3.Lettering in Graphic communication	3 90 minutes	Power Point Presentation Tutor produces a power point presentation on the strategies to make upper and lower case Lettering as used for Graphic communication. Group Demonstration Tutor demonstrates and guides student teachers to provide lettering to the drawings developed in two and three dimensions. NB: The group demonstration considers students with special needs and mixed ability students. Closure Tutor reflects on the main points of the lesson to close it	Power Point Presentation Student teachers observe the power point presentation . Group Demonstration Student teachers form groups and engage in hands on demonstration of the uses of the various appropriate materials for Graphic communication. Closure Student teachers to reflect on main points of the lesson to close.		
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes) Teaching Learning Resources	 Individual presentation of portfolio on the uses of tools, equipment, lines and lettering in Graphic communication. Learning outcome assessed : CLO 1 Individual presentation of portfolio on two and three dimension drawings and their respective lettering as required in Graphic communication. Learning outcome assessed : CLO 1 1. Over head projector. 2. Video Camera, LCD Projector and Screen, Tripod and Monitoring Unit (for viewing). 					
Required Text (core)	(Tools and	<i>l processes an</i>). Engineering	<i>Technical skills and drawing d methodology)</i> . Accra Unim Drawing from first principle	ax		
Additional Reading List	(Tools and Maguire D. (1998	processes an	Technical skills and drawing d methodology). Accra Unim Drawing from first principle	nax		

CPD Needs	Team teaching, ICT skills, Brainstorming and Critical analysis
	Constant practice to ensure mastery

Year of B.Ed.	2	Semester 1 Place of lesson in semester 123456789					2 3 4 5 6 7 8 9 10	11 12	
Title of Lesson		Introduction to AutoCAD Lesson Duration 4 hou							3 hours
Lesson descripti	on	The introduction to AutoCAD for the construction of geometrical shapes and forms involve the techniques that can be used to practice the manipulative skills of the AutoC software.							
Previous studen teacher knowled prior learning (assumed)	-	•	 Student Teachers are: Aware of the fact that the manipulative skills in the construction of geometrical shapes and forms using AutoCAD important and relevant in the fields of Engineering and Building as Graphic communication tool to accelerate the appropriate ideas or views in problem solving. 						
Possible barriers learning in the le		• • Fear and	 area. Tutors of Graphic communication may not appreciate the fact that the female who do Graphic communication most often become very successful. Fear and anxiety, lack of practical know-how 						
Lesson Delivery chosen to suppo students in achie the outcomes	ort	Face- to-face	to-face Activity 🗹 Based t Study					e-learning opportunities 🗹	Practi cum
Lesson Delive main mode of d chosen to su student teache achieving the le outcomes.	elivery upport ers in	 Use demonstration methods to guide student teachers to use the techniques involved in geometrical shapes and forms using AutoCAD software. Use think, pair and share to describe the appropriate procedures involved Guide student teachers to demonstrate the various manipulative skills in drawing geometrical shapes and forms using the AutoCAD software. Use group discussions to get student teachers discuss their strengths and weaknesses in the use of the AutoCAD software. 							
 Purpose for lesson, what want the stu- to achieve, as basis for learning outcomes. expanded wo of the description Write in aspects of the addressed 	at you udents serves or the An version ption. full	softv enha	ware in the m	ianipulative npetence in	skills of const	tructing ge	eomet	rs to the use of Aut rical shapes and for awings as required i	ms to

 Learning Outcome for the lesson, picked and developed from the course specification Learning 	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.	
indicators for each learning outcome	 Demonstrate knowledge and skills involved in manipulating AutoCAD software to construct Geometrical forms and shapes Demonstrate knowledge and skills involved in manipulating AutoCAD software to construct Pictorial views 		Prepare an album of Geometrical forms and shapes drawn through manipulation of the AutoCAD software. Produce a portfolio of Pictorial views namely perspective, isometric oblique drawings thro the manipulation of th AutoCAD software.	 a the skills, communication skills, reflection and honesty. critical thinking and problem solving, cultural and civic literacy, innovation and collaboration a and Gender issues; SEN (therapeutic); 	
	 Demonstrate knowledge and skills involved in manipulating AutoCAD software to construct Pictorial views Demonstrate knowledge and skills involved in manipulating AutoCAD software to construct Pictorial views 		Produce a portfolio of Conic sections throug the manipulation of th AutoCAD software. Produce a portfolio of Orthographic projectio through the manipulat of the AutoCAD softwa	h ne ons tion	
Topic	Topic Sub-topic	Stage/Time	Teaching and learning activities to achieve lea outcomes: depending on delivery mode selected. Te led, collaborative group work or independent study		
Introduction to AutoCAD	Previous Knowledge	1 15 minutes	Teacher Activity Introduction Tutor Introduce the drawing setup procedure using AutoCAD through video presentation and discussion	Student Activity Introduction Student teachers participate by carefully observing the procedures and discuss the presentation.	
	Drawing setup	2 25minutes	Demonstration Tutor demonstrates the steps involved in the drawing commands of the software through overhead projection and discuss.	Demonstration Student teachers participate by carefully observing the steps and participate in the discussion.	

	Drawing	3		
	commands	35 minutes	Demonstration &	Demonstration & Explanation
	commanus	55 minutes	Explanation	Student teachers carefully
			Tutor Introduce the	observe and practice the modifying
			modifying	command and listen to tutors
			commands of the	explanation.
	Modifying		software and	
	commands		demonstrate the	
	commands		procedure step by	
			step and explain.	
		4	Demonstration&	Demonstration& Discussion
	Multi-view	35minutes	Discussion	Student teachers carefully observe
	drawing		Tutor use video	the Multi-view drawing procedures
			presentation to	and practice the demonstration.
			introduce Multi-	
			view drawing and	
	Solid		use interactive	
	modelling		lecture discuss and	
			demonstrate.	
		5	Video Presentation	Video Presentation &
		35minutes	& Demonstration	Demonstration
			Tutor presents video	Student teachers observe the
			on the processes	processes involved in solid
	Rendering		involved in solid	modelling of the AutoCAD software
			modelling of the	and practise the demonstration.
			AutoCAD software	
			and demonstrate	
			the solid modelling	
		6	the solid modelling	Video Presentation &
		6 35minutes	the solid modelling Video Presentation	Video Presentation &
		6 35minutes	the solid modelling Video Presentation & Demonstration	Demonstration
		-	the solid modelling Video Presentation & Demonstration Tutor presents video	Demonstration Student teachers
		-	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes	Demonstration Student teachers carefully observe the
		-	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid	Demonstration Student teachers carefully observe the Rendering procedures
		-	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the	Demonstration Student teachers carefully observe the Rendering procedures and practice the
		-	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software	Demonstration Student teachers carefully observe the Rendering procedures
		-	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate	Demonstration Student teachers carefully observe the Rendering procedures and practice the
		-	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software	Demonstration Student teachers carefully observe the Rendering procedures and practice the
		-	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration
		-	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid.	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration
		-	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the
		-	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the
		35minutes	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises the lesson to end the lesson	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the tutor's summary end the lesson.
Lesson assessments –		35minutes presentation o	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises the lesson to end the lesson	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the
evaluation of learning:	manipulati	35minutes presentation o ion of the Autor	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises the lesson to end the lesson f portfolio on the shape CAD software	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the tutor's summary end the lesson.
evaluation of learning: of, for and as learning	manipulati Learning outco	35minutes presentation o ion of the Autor ome assessed :	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises the lesson to end the lesson f portfolio on the shape CAD software CLO 2	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the tutor's summary end the lesson.
evaluation of learning: of, for and as learning within the lesson	manipulati Learning outco • Individual	35minutes presentation o ion of the Auto ome assessed : presentation o	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises the lesson to end the lesson f portfolio on the shape CAD software CLO 2 f album on pictorial, ort	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the tutor's summary end the lesson.
evaluation of learning: of, for and as learning within the lesson (linking to learning	manipulati Learning outco Individual sections us	35minutes presentation o ion of the Autor ome assessed : presentation o sing the manipu	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises the lesson to end the lesson f portfolio on the shape CAD software CLO 2 f album on pictorial, ort lations of the AutoCAD	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the tutor's summary end the lesson.
evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)	manipulati Learning outco Individual sections us Learning outco	35minutes presentation o ion of the Autor ome assessed : presentation o sing the manipu	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises the lesson to end the lesson f portfolio on the shape CAD software CLO 2 f album on pictorial, ort ulations of the AutoCAD CLO 2	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the tutor's summary end the lesson.
evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes) Teaching Learning	manipulati Learning outco Individual sections us Learning outco	35minutes presentation o ion of the Autor ome assessed : presentation o sing the manipu	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises the lesson to end the lesson f portfolio on the shape CAD software CLO 2 f album on pictorial, ort ulations of the AutoCAD CLO 2	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the tutor's summary end the lesson.
evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes) Teaching Learning Resources	manipulati Learning outco Individual sections us Learning outco Computer	35minutes presentation o ion of the Autoo ome assessed : presentation o sing the manipu ome assessed : o r laboratory and	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises the lesson to end the lesson f portfolio on the shape CAD software CLO 2 f album on pictorial, ort ilations of the AutoCAD CLO 2 d Accessories	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the tutor's summary end the lesson.
evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes) Teaching Learning	manipulati Learning outco Individual sections us Learning outco Computer	35minutes presentation o ion of the Autor ome assessed : presentation o sing the manipu ome assessed : r laboratory and emens, B. (2017	the solid modelling Video Presentation & Demonstration Tutor presents video on the processes involved in solid modelling of the AutoCAD software and demonstrate the rendering of solid. Closure Tutor summarises the lesson to end the lesson f portfolio on the shape CAD software CLO 2 f album on pictorial, ort ilations of the AutoCAD CLO 2 d Accessories	Demonstration Student teachers carefully observe the Rendering procedures and practice the demonstration Closure Student teachers listen to the tutor's summary end the lesson.

	Integrating Technology and Digital Media in the Classroom. (7th ed).
	O' Leary, T. J., & O' Leary L. I. (2017). Computing essentials, 26th edition. New York:
	McGraw Hill.
	Wempen, F. (2014) Computing Fundamentals: Introduction to Computers. New York:
	Wiley
	Microsoft Encarta (2018). 1993-2005 Microsoft Corporation.
	Shelly, G. B., Vermaat, M. E. (2011). Discovering computers 2012: Living in a digital world,
	Complete International
	Edition. Boston, MA: Thompson Course Technology.
	Shelly, R., Cashman, T.J., Gunter, G.A., and Gunter, R.E. (2013). Teachers Discovering
	Computers.
	Thomson Course Technology.
Additional Reading	Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA
List	[www.tessafrica.net], Udemy
	etc)
CPD Needs	Team teaching, ICT skills, Brainstorming and Critical analysis

Year of B.Ed.	2	Semeste	Semester 1 Place of lesson in semester			1 2 3 4 5 6 7 8 9 10 11 12				
		-						1		
Title of Lesson			Construction of geometrical shapes (Circles and Triangles)Lesson Duration3 hours							
Lesson descripti	on		Construction of Geometrical shapes (circles and triangles) involve the construction techniques needed to develop the various circular and triangular shapes							
Previous studen knowledge, prio learning (assum	r	Awa	Student Teachers are: Aware that Geometrical shapes play very important role in the fields of Engineering and Building for Graphic communication. The study of the skills in Geometrical shapes construction is necessary to enhance their understanding of Technological issues.							
Possible barriers learning in the lo		• () () () () () () () () () () () () () (area.						at the female	
Lesson Delivery to support stude achieving the ou	ents in	Face- to-face	Practical Activity	Work- Based Leaning	Seminar s	Indepe nt Stuc		learning oportuniti	Practicum	
Lesson Delivery mode of deliver to support teachers in achi learning outcom	ry choser studen eving the	 shap Use f betw Use f Geor Use f weal 	 Use demonstration methods to guide student teachers to construct Geometrical shapes . Use think, pair and share to enable student teachers to identify the difference between the various Geometrical shapes. Use concept mapping to describe the links and connections the various types of Geometrical shapes. 							
•	erves as learning Ar ersion o ion. Il aspects	i T o r s t g c i	nanipulative	e of this lessor e skills of cons tence in Engir tion.	structing ge	ometrica	al shapes a	and forms to	enhance	

 Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning 	Learning Outco	mes	Learn	ing Indicators	Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.	
outcome	 Demonstrat knowledge a skills involve constructing ie (concent eccentric) Demonstrat knowledge a skills involve the construt Triangles 	and ed in g circles ric and re and ed in	ie (c	are an album of circles oncentric and eccentric) uce a portfolio of the ruction of the various gles.	 Assessment skills, social skills, communication skills, reflection and honesty. critical thinking and problem solving, cultural and civic literacy, innovation and collaboration Gender issues; SEN (therapeutic); diversity and inclusivity, information literacy, 	
Торіс	Topic Sub-topic	Stage/Time		outcomes: depending Teacher led, colla independent study	g activities to achieve learning g on delivery mode selected. borative group work or	
Construction of geometrical shapes (Circles and Triangles)	Previous Knowledge Construction of circles Concentric	rledge <mark>15 minutes</mark> truction cles entric		Teacher ActivityIntroductionTutor introduce the student teachers to a general discussion about Geometrical shapes namely circles and triangles based on the student teachers previous	Student Activity Introduction Student teachers participate in the introduction based upon their previous knowledge.	
	and eccentric			Power Point Presentation & Discussion Tutor makes power point presentation on the techniques for the construction of various circles (concentric and eccentric) explain and lead a discussion the techniques. Demonstration &Practise Tutor demonstrates the construction techniques for the different types of circular shapes	Power Point Presentation & Discussion Student teachers observe the steps in the presentation of the techniques Listen to the tutors explanation on the techniques. Demonstration &Practise Student teachers observe the tutors demonstration note the specific techniques in the different types of the circular shapes. Student teachers practise the construction of circular geometrical shapes.	

	Triangles: right angled, equilateral, isosceles and scalene.	3 105 minutes	Demonstration , Explanation & Practise Tutor guide student teachers to classify the Triangles. Tutor demonstrates the techniques of constructing the various triangles. Explain the specific principles guiding the construction of the Triangles. 4.Assign student teachers to practise the construction of triangles. Closure Tutor reflects on the main points of the lesson to end.	Demonstration , Explanation & Practise Observe and take note of the classification of triangles. Student teachers observe the tutors demonstration on the specific types of triangles and the techniques involved. Listen to tutors explanation on the specific guiding principles for construction of triangles. Student teachers practise the construction of triangles. Closure Student teachers reflect on the main points of the lesson to close.		
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes) Teaching Learning Resources Required Text (core)	 Individual presentation of portfolio on the construction of circular shapes construction Learning outcome assessed : CLO 2 Individual presentation of album on the construction of the various triangles Learning outcome assessed : CLO 2 Geometrical Drawing Equipment and Drawing room Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 1 (Tools and processes and methodology). Accra Unimax Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers. 					
Additional Reading List CPD Needs	(Tools ar Maguire D. (199 Arnorld	nd processes and 8). Engineering Publishers.	d methodology). Accra U	ples using AutoCAD. London:		

Year of B.Ed.	2	Semester 1 Place of lesson in semester				emester	1 2 3 4 5 6 7 8 9 10 11 12		
Title of Lesson Lesson description		Construction of geometrical forms (Quadrilaterals and Polygons)Lesson Duration3 hoursThe construction of Geometrical forms for Quadrilaterals and polygons provides the specific constructional techniques needed to ensure that the required manipulative 							
Previous student teacher knowledge, prior learning (assumed)		Student Teachers are: Aware that Geometrical shapes play very important role in the fields of Engineering and Building for Graphic communication. The study of the skills in Geometrical shapes construction is necessary to enhance their understanding of Technological issues.							
Possible barriers to learning in the lesson		 Fear and anxiety, lack of practical know-how Gender issues in the fact that <i>Graphic Communication is a male dominated skill area</i>. Tutors of Graphic communication may not appreciate the fact that the female who do Graphic communication most often become very successful. Graphic communication not being a vocation for SEN student teachers 							
Lesson Delivery chosen to suppo students in achi the outcomes Lesson Delivery mode of chosen to student teach achieving the outcomes.	ort eving v – main delivery support ners in	 Use think, pair and share to enable student teachers to identify the difference between the various Geometrical shapes. Use concept mapping to describe the links and connections the various types of 						fference s types of gths,	
lesson, wh want the to achieve as basis learning ou An e	students , serves for the utcomes. xpanded of the	m		skills of co			nt teachers to the s		

 Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes Demonstrate knowledge and skills involved in constructing Quadrilaterals			earning Indicators	Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed. • Assessment skills, social • skills, communication skills, reflection and honesty. • critical thinking and problem solving,		
	Demonstrate knowledge and skills involved in the construction of Polygons		tł		 Gender issues; SEN (therapeutic); diversity and inclusivity, information literacy 		
Topic Construction of	Topic Sub-topic Stage/Tim		e	independent study			
geometrical forms (Quadrilaterals and Polygons	Previous1Knowledge10 minutesQuadrilaterals:square,rectangles,10 minutes		5	Teacher Activity Introduction Tutor lead the student teachers in a general discussion about Quadrilaterals and Polygons based on the student teachers' previous knowledge.	in the introduction discussion on Quadrilaterals and Polygons based on the		
	Polygons, pertagons, hexagons, and nonagon	s and 85 minutes s, ns, ns, s, and		Power Point Presentation, Explanation& Demonstration Tutor makes power point presentation on the techniques for the construction of the various Quadrilaterals. Explain and lead a discussion on the techniques involved. Tutor demonstrates the construction techniques for the different types of Quadrilaterals Demonstration, Explanation & Practise	Power Point Presentation, Explanation & DemonstrationStudent teachers observe the steps in the presentation of the techniquesListen to the tutor's explanation on the techniques.Student teachers observe the tutors demonstration note the specific techniques in the different types of Quadrilaterals.Student teachers practise the construction of QuadrilateralsDemonstration, Explanation & Practise Observe and take note of		
				Tutor guide student teachers to classify the Polygons according to sides.	the classification of Polygons. Student teachers observe		

		Tutor demonstratesthe techniques ofconstructing thevarious triangles.Explain the specificprinciples guiding theconstruction ofPolygons.Assign studentteachers to practisethe construction ofPolygons.Closure	the tutors demonstration on the specific types of Polygon and the techniques involved. Listen to tutors explanation on the specific guiding principles for construction of Polygons. Student teachers practise the construction of Polygons. Closure Student teachers listen to the tutor's summary to end				
		Tutor summarise the main points of the	the lesson.				
		lesson to end the					
		lesson					
Lesson assessments – evaluation of learning:	Individual development of portfolio on the construction of the different types of						
of, for and as learning	Quadrilaterals Learning outcome assessed : CLO 2						
within the lesson	 Individual presentation of album on the construction of the various sides of 						
(linking to learning	Polygon						
outcomes)	Learning outcome assessed : CLO 2						
Teaching Learning Resources	Geometrical Drawing Equipment and Drawing room						
Required Text (core)	 Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 1 (Tools and processes and methodology). Accra Unimax Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: 						
	Arnorld Publishers.						
Additional Reading List	Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 2 (Tools and processes and methodology). Accra Unimax						
	Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers.						
CPD Needs	Team teaching , ICT skills, Brainstorming and Critical analysis						

Year of B.Ed.	2	Semest	Semester 1 Place of lesson in semester			emester	1 2 3 4 5 6 7 8 9 10 11 12			
Title of Lesson	Conic sections and scale drawing Lesson Duration 2 hours									
Lesson description		Conic sections and scale drawingLesson Duration3 hoursConic sections represent the plane figure interpretation of Ellipse, Parabola and Hyperbola shapes and Scale drawing involve Plain and Diagonal scales for representing reduction or enlarging of sizes objects convenience.3 hours								
Previous student tea knowledge, prior lea (assumed)	Student Teachers are: Aware that Conic sections and scale drawing play very important role in the fields of Engineering and Building for Graphic communication. The study of these skills are necessary to enhance their understanding of Technological issues.									
Possible barriers to learning in the lesso	'n	 Fear and anxiety, lack of practical know-how Gender issues in the fact that <i>Graphic Communication is a male dominated skill area</i>. Tutors of Graphic communication may not appreciate the fact that the female who do Graphic communication most often become very successful. Graphic communication not being a vocation for SEN student teachers 								
Lesson Delivery – ch support students in achieving the outcom		Face- to- face ☑	Practical Activity ☑	Work- Based Leaning	Seminars	Independen Study	t e-learning opportunities ☑	Practicum		
Lesson Delivery - mode of delivery ch support student tea achieving the outcomes.	iosen to	 Use think, pair and share to enable student teachers to identify the difference between the various Conic sections and the idea of Scale drawing. Use concept mapping to describe the links and connections the various types of Conic shapes 								
 Purpose for the what you was students to a serves as basis learning outcor expanded vers the description. Write in full as the NTS address 	ant the achieve, for the mes. An sion of pects of	The purpose of this lesson is to introduce student teachers to the techniques of presenting Conic sections like Ellipse, Parabola and Hyperbola geometrical drawing. Also Scale drawing is to introduce student teachers to the techniques involved in the construction of Plain and Diagonal scales.								
 Learning Outcon the lesson, pick developed from course specifica Learning indicat 	ed and the ition	Learning Outcomes		Lear	Learning Indicators		Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.			
each learning o	utcome	know und tech in th of C • Dem know invo cons	nonstrate wledge, erstanding a iniques invo ne construct Conic sectior nonstrate wledge and ilved in the struction of es for drawi	diffe secti lved ion ns Prod skills Diago	are an album rent types o ons uce a portfoli truction of Pla onal scales.	f Conic o on the	 Assessment skills, social skills, communication sk reflection and honesty. critical thinking and prof solving, Gender issues; SEN (then diversity and inclusivity, information literacy 			

Торіс	Торіс	Stage/Tim	Teaching and learning activities to achieve learning outcomes: depending on delivery mode selected. Teacher led,					
Conic sections and scale	Sub-topic	e	collaborative group work or independent study					
drawing		_	Teacher Activity	Student Activity				
	Previous	1	Introduction	Introduction				
	Knowledge	15 minutes	Tutor lead the student	Student teachers participate in				
			teachers in a general	the discussion.				
			discussion on Conic sections					
			and Scale drawing.					
	Ellipse	2	Power Point Presentation,	Power Point Presentation,				
	Parabola	2 90 minutes	Explanation & Demonstration	Explanation & Demonstration Student teachers observe the				
	Hyperbola	50 minutes	Tutor makes power point	steps in the presentation of the				
			presentation on the	techniques				
			techniques for the					
			construction of the					
			variousConic sections.	Listen to the tutor's explanation				
			Explain the differences	on the techniques.				
			between the types and their					
			specific techniques.	Student teachers observe the demonstration note the specific				
			Tutor demonstrates the	techniques in the different types				
	Plain scale		construction techniques for	of Conic sections and practise				
	Diagonal scale		the different types of	the constructions.				
			Quadrilaterals					
		3 75 minutes	Demonstration&Explanation Tutor guide student teachers	Demonstration& Explanation				
			to identify the type of scales.	Observe and take note of the type of drawing scales				
			Tutor demonstrates the					
			techniques of constructing	Student teachers observe the				
			Plain and Diagonal scales.	demonstration on the types of				
			Explain the specific principles	scale and the techniques				
			guiding the construction of	involved.				
			each scale.	Listen to tutors explanation on				
			Assign student teachers to	the principles for constructing				
			practise the construction of scales.	drawing scales. Student teachers practise the				
			Seales.	construction of scales.				
			Closure	Closure				
			Tutor summarises the main points of the lesson to close.	Student teachers listen to the tutor's summary.				
Lesson assessments –		velopment of	portfolio on the construction of	the different types of Conic				
evaluation of learning: of, for and as learning within	sections Learning outcome	a accecced · CI	03					
the lesson (linking to	-			in and Diagonal scales				
learning outcomes)	 Individual presentation of album on the construction of Plain and Diagonal scales. Learning outcome assessed : CLO 3 							
Teaching Learning Resources	-		t and Drawing room					
Required Text (core)	Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 1 (Tools and processes and methodology). Accra Unimax							
	-		Drawing from first principles using	ng AutoCAD. London: Arnorld				
	Publisher							
Additional Reading List	Amoakohene, S.K	. et al (1998). ⁻	Technical skills and drawing for t	eacher training book 2 (Tools and				

	Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers.
CPD Needs	Team teaching, ICT skills, Brainstorming and Critical analysis

Year of B.Ed. 2	Sen	nester	1 Plac	e of lesson in se	emester	1234567	8 9 10 11 12			
	Development of ourform of Dicks Drives									
Title of Lesson	Development of surfaces of Right Prisms Lesson Duration 3 hours									
Lesson description	cylinders,	Development of surfaces involved techniques in presenting the various surfaces of solid figures like cylinders, square, rectangular, triangular and polygonal prisms. The surfaces involved are plan, front view and the true shape and length.								
Previous student		eachers are:								
teacher knowledge,						ngineering and Bui	-			
prior learning			on or illustra	tions to express	s the ideas o	or views they have a	about solution to a			
(assumed)		problem.	nat the desig	ins serve the ro	le a commi	unicative guide in th	e making of many			
	local arte									
Possible barriers to learning in the lesson	• 0 • T •									
Lesson Delivery –	Face-	Practical	Work-	Seminars	Independe	-	Practicum			
chosen to support	to-face	Activity	Based		Study	opportunities	S			
students in achieving the outcomes			Leaning							
Lesson Delivery –	• Use t	hink, pair and	I share to en	able student tea	achers to ide	entify the difference	between the			
main mode of delivery		-		ssociated surfa						
chosen to support			-	be the links and	connections	s of the various types	s of Right prisms			
student teachers in		surface devel	•							
achieving the learning outcomes.	-	-				their strengths, wea	kness, aspirations			
outcomes.	anu u	ise the morn		nect to improve	their comp	elence.				
 Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 				is to introduce s elopment of Rig		hers to the manipula	itive techniques of			

Learning Outcome for the lesson, picked and developed from the course specification	Learning Outcome Demonstrate k		Learning Indicators Prepare an album of the	Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed. • Assessment skills, social
Learning indicators for each learning outcome	understanding techniques inv constructing th development f prisms	and olved in ne surface	different types of surface development of Right Prisms namely: cylinder, square, rectangular ,pentagonal and hexagonal.	 Assessment skills, social skills, communication skills, reflection and honesty. critical thinking and problem solving, Gender issues; SEN (therapeutic); diversity and inclusivity, information literacy
Topic Development of surfaces of Right	Topic Sub-topic	Stage/Time		-
Prisms			Teacher Activity	Student Activity
	Previous Knowledge		Introduction Tutor engages student teachers in a discussion on the various types of Right prisms to introduce the lesson based on student	Introduction Student teachers participate in the discussion on the e various types of Right prisms based on their previous knowledge.
	Right prisms:		teachers previous	
		<mark>2</mark> 30 minutes	knowledge. Power Point Presentation, Explanation & Demonstration	Power Point Presentation, Explanation & Demonstration Student teachers observe the steps
	Cylinder		Tutor makes power point presentation on the techniques for the development of surfaces of	in the presentation of the techniques
			cylindrical prisms. Explain the specific techniques involved.	Listen to the tutor's explanation on the techniques. Student teachers observe the
	square, rectangular,		3.Tutor demonstrates the construction techniques for surface development	demonstration techniques and practise the drawing.
	triangular,	<mark>3</mark> 70 minutes	Power Point Presentation, Explanation & Demonstration Tutor makes power point presentation on the techniques for the construction for the surface	Power Point Presentation, Explanation & Demonstration Student teachers observe the steps in the presentation of the techniques
			development of square, rectangular and triangular prisms	Listen to the tutor's explanation on the techniques.
	Polygonal : Pentagonal and		Explain the specific techniques involved. Tutor demonstrates the	Student teachers observe the demonstration note the specific techniques and practise the development of surfaces.
	Hexagonal		construction techniques for the different types of Quadrilateral prisms.	

[<mark>4</mark>	Power Point Presentation,	Power Point Presentation,
		<mark>70 minutes</mark>	Explanation &	Explanation & Demonstration
			Demonstration	Student teachers observe the steps
			Tutor makes power point	in the surface development of
			presentation on the	Polygonal prisms.
			techniques for surface	
			development of Polygonal	
			prisms.	Listen to the tutor's explanation on the techniques.
			2. Explain the specific	
			techniques involved.	Student teachers observe the demonstration note the specific
			3.Tutor demonstrates the	techniques and practise the
			construction techniques in	development of surfaces.
			the surface development	Closure
			of Polygonal prisms	Student teachers listen to the
			Closure	tutor's summary to end the lesson.
			Tutor summarises the main	
			points of the lesson to	
			close.	
Lesson assessments –	 Individual deve 	lopment of por	tfolio on the surface developm	ent of cylindrical, square and
evaluation of learning:	rectangular and	• .		
of, for and as learning	Learning outcome a	assessed : CLO	4	
within the lesson	 Individual pres 	entation of alk	oum on the surface developme	nt of Polygonal prism namely :
(linking to learning	pentagonal and			
outcomes)	Learning outcome a			
Teaching Learning	Geometrical Drawin	g Equipment a	nd Drawing room	
Resources				
Required Text (core)			-	acher training book 1 (Tools and
			gy). Accra Unimax	
				om first principles using AutoCAD.
		norld Publishe		
Additional Reading			-	acher training book 2 (Tools and
List	•		gy). Accra Unimax	
	- · ·	ngineering Dra	awing from first principles using	g AutoCAD. London: Arnorld
CDD No. da	Publishers.			- 1
CPD Needs	leam teac	ning, ICT skills	, Brainstorming and Critical an	aiysis

Year of B.Ed.	2	Semester 1 Place of lesson in semester 1 2 3 4 5 6 7 8 9 10 11 12								
Title of Lesson	0	Development of surfaces of Right Pyramid. Lesson Duration 3 hours								
Lesson descriptio	f	Development of surfaces involved techniques in presenting the various surfaces of solid figures like cylinders, square, rectangular, triangular and polygonal prisms. The surfaces involved are plan, front view and the true shape and length.								
Previous student teacher knowledg prior learning (assumed)	зе, Т	 Student Teachers are: Aware of the fact that those in the fields of Engineering and Building use Graphic communication or illustrations to express the ideas or views they have about solution to a problem. They are also aware that the designs serve the role a communicative guide in the making of many local artifacts 								
Possible barriers learning in the lesson	to F	 Fear and anxiety, lack of practical know-how Gender issues in the fact that <i>Graphic Communication is a male dominated skill area.</i> Tutors of Graphic communication may not appreciate the fact that the female who do Graphic communication most often become very successful. Graphic communication not being a vocation for SEN student teachers 								
Lesson Delivery – chosen to suppor students in achieving the outcomes		ace-to- ace ₪	Practical Activity ☑	Work- Based Learning	Seminars ☑	Independent Study	e-learning opportunities	Practicum		
Lesson Delivery main mode delivery chosen support stud teachers	of to ent in the	the variou Use conce prisms the Use group	us Right prisr ept mapping eir surface do discussion	ns and their to describe evelopment to enable st	associated s the links and udent teach	surface develop d connections c ers discusses th	tify the difference oment. If the various typ neir strengths, we eir competence.	es of Right eakness,		
you want students achieve, ser as basis for learning outcomes. expanded version of description.	hat Ti the to ves the An the full the	• •	f this lesson the surface				manipulative te	chniques of		

 Learning Utcome for the lesson, picked and developed from the course specification Learning 	Learning Ou	tcomes	Learning Indicators	Identify which cross- cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.		
indicators for each learning outcome	 Demonstrate knowledge, understanding and techniques involved in constructing the surface development for the Right Pyramid 		Prepare an album of the different types of surface development of Right Pyramid namely :,pentagor and hexagonal .	skills, communication		
ТОРІС			Teaching and learning activities	s to achieve learning outcomes:		
Development of surfaces of Right	Topic Sub-topic	Stage/Time	depending on delivery mode selected. Teacher collaborative group work or independent study			
Pyramid	Sub-topic		Teacher Activity	Student Activity		
	Previous	1	Introduction	Introduction		
	Knowledge	10 minutes	Tutor engages student	Student teachers		
			teachers in a discussion on	participate in the		
			the various types of Right	discussion on the		
			Pyramid based on the	various types of		
			previous knowledge of the	Right Pyramid based		
			student teachers.	on their previous knowledge		
		2	Power Point Presentation,	Power Point Presentation,		
	Cone,	85 minutes	Explanation & Demonstration	Explanation & Demonstration		
	square,		Tutor makes power point	Student teachers observe the		
	rectangle, triangle		presentation on the techniques for the	steps in the presentation of the techniques		
	u la ligie		development of surfaces of	Listen to the tutor's		
			Right Pyramid namely :cone,	explanation on the techniques.		
			square and triangles	Student teachers observe the		
			square and trianglesStudent teachers observeExplain the specific techniquesdemonstration technique			
			involved.	practise the drawing.		
			Tutor demonstrates the			
			construction techniques for			
			surface development			
	Pentagon,	3	Power Point Presentation,	Power Point Presentation,		
	and	85 minutes	Explanation & Demonstration	Explanation & Demonstration		
	hexagonal		Tutor makes power point	Student teachers observe the		
	pyramids.		presentation on the	steps in the presentation of the		

		techniques for the development of surfaces of Right Pyramids namely: pentagon and hexagonal pyramids. Explain the specific techniques involved. Tutor demonstrates the construction techniques for	technique Listen to the tutor's explanation on the techniques. Student teachers observe the demonstration techniques and practise the drawing.				
		surface development Closure Tutor summarises main points of the lesson to close.	Closure Student teachers listen to the tutor's summary to end the lesson.				
Lesson assessments			a second of outling trians, any area				
 – evaluation of learning: of, for and 	 Individual developme and rectangular and t 	nt of portfolio on the surface development riangular prisms	opment of cylindrical, square				
as learning within	Learning outcome assess						
the lesson (linking	-	on of album on the surface develo	ament of Polygonal prism				
to learning	-	and hexagonal prisms .	pinent of rolygonal prism				
outcomes)	Learning outcome assesse						
Teaching Learning		ipment and Drawing room					
Resources							
Required Text (core)	 Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 1 (Tools and processes and methodology). Accra Unimax Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers. 						
Additional Reading	Amoakohene, S.K. et al (1	998). Technical skills and drawing f	or teacher training book 2 (Tools				
List	•	methodology). Accra Unimax					
	Maguire D. (1998). Eng	ineering Drawing from first prin	ciples using AutoCAD. London:				
	Arnorld Publishers.						
CPD Needs	Team teaching , I	CT skills, Brainstorming and Critica	l analysis				

Year of B.Ed.	2	Semester	Semester 1 Place of lesson in semester 1 2 3 4 5 6 7 8 9 10 11 12									
Title of Lesson			Pictorial drawings Lesson Duration 3 hours									
Lesson descripti	on		Pictorial drawing involves the presentation of objects in three dimensional drawings namely : Perspective, Isometric and Oblique drawings.									
Previous studen knowledge, prio (assumed) Possible barriers	r learnin	g • They are	 Student Teachers are: Aware of the fact that those in the fields of Engineering and Building use Graphic communication or illustrations to express the ideas or views they have about solution to a problem. They are also aware that the designs serve the role a communicative guide in the making of many local artifacts 									
learning in the l		• (2 • 7	 Fear and anxiety, lack of practical know-how Gender issues in the fact that <i>Graphic Communication is a male dominated skill area</i>. Tutors of Graphic communication may not appreciate the fact that the female who do Graphic communication most often become very successful. Graphic communication not being a vocation for SEN student teachers 									
Lesson Delivery			Practica		Seminars	Independen	e-learning	Pract				
to support stude		to-face	Activity			t Study	opportunities	icum				
achieving the ou Lesson Delivery mode of delive to support teachers in ach learning outcom	y – ma ry chose stude ieving th	n Use f betw e Use o Picto • Use o weal	 Use think, pair and share to enable student teachers to identify the difference between different types of the Pictorial drawings. Use concept mapping to describe the links and connections of the various types of Pictorial drawings. 									
lesson, w want the st	erves e learnir /e version ion. Il aspec	u o s g n of	mani	ose of this lesso pulative techniqu rial drawings								

 Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning 	Learning Outcomes Learning Outcomes Demonstrate		Lear	ning Indicators	issu skill add thes	Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.	
outcome	knowledge, understandir techniques involved in d objects three	knowledge,difunderstanding anddirtechniquespicinvolved in drawingpeobjects threeisodimension orr		are an album of the rent types of three ension drawing or orial drawings : pective, oblique and etric drawings.	 Assessment skills, social skills, communication skills, reflection and honesty. critical thinking and problem solving, Gender issues; SEN (therapeutic); diversity and inclusivity, information literacy 		
Topic Pictorial drawings	Topic Sub-topic	Stag Tim		• •	on	vities to achieve learning delivery mode selected. tive group work or	
				Teacher Activity		Student Activity	
	Previous	1		Introduction		Introduction	
	Knowledge	5 minu	utes	Tutor engages student teachers in an		Student teachers participate in the	
	Pictorial drawing of		introduction discussion on the various types of Pictorial drawing bas on student teachers previous knowledge.		b	introduction discussion on the various types of Pictorial drawing based on student teachers previous knowledge.	
	objects in:	2 60 min	utes	Power Point Presentation Tutor makes power		Power Point Presentation Student teachers observe the steps in the	
	Isometric			point presentation for Isometric drawing and practice.		presentation of Isometric drawing and practise.	
	Oblique	3 50 minutes		Explanation & Discussion Explain and Discuss the specific techniques involved in isometric drawing. Demonstration Tutor demonstrates the construction techniques for isometric drawing an practice.	e s	Explanation & Discussion Listen to the tutor's explanation and discuss the isometricdrawing techniques. Demonstration Student teachers observe the demonstration techniques and practise the drawing.	
				Power Point Presentation Tutor makes power poin presentation on the techniques for Oblique drawing Demonstration, Explanation & Discussio Tutor demonstrate,	nt on	Power Point Presentation Student teachers observe the steps in the presentation of the techniques and practise Demonstration, Explanation & Discussion Observe the demonstration, Listen to	

			Explain and discussthe	the tutor's explanation
				and discuss the
			specific techniques	
	Perspective.		involved in oblique	techniques in oblique
			drawing.	drawing.
			Demonstration	Demonstration & Practise
		4	&Practise	Student teachers observe
		65 minutes	Tutor demonstrates the	the steps involved in the
			construction techniques	demonstration techniques
			involved in Perspective	of perspective drawing
			drawing and asks student	and practise it.
			teachers to practice.	
				Discussion & Explanation
			Discussion & Explanation	Student teachers
			Tutor engage student	participate in the
			teachers in discussion	discussion and listen to
			and explain the specific	the tutors explanations on
			techniques involved in	the steps involved in the
			Perspective drawing.	presentation of the
			reispective drawing.	perspective techniques.
			Closure	Closure
			Tutor summarises the	
				Student teachers listen to
			main points of the lesson	the tutor's summary of
			to close.	the lesson.
Lesson assessments –				
evaluation of learning: of,		•	portfolio on Oblique and iso	metric drawings.
for and as learning within	Learning outcom	e assessed : C	LO 5	
the lesson (linking to			album on the different form	is of Perspective drawings .
learning outcomes)	Learning outcom			
Teaching Learning	Geometrical	Drawing Equi	pment and Drawing room	
Resources				
Required Text (core)			Technical skills and drawing	-
			id methodology). Accra Unin	
	•		Drawing from first principle	s using AutoCAD. London:
	Arnorld P			
Additional Reading List			Technical skills and drawing	_
	-	•	id methodology). Accra Unin	
	•		Drawing from first principle	s using AutoCAD. London:
		ublishers.		
CPD Needs	Team tea	aching , ICT sk	ills, Brainstorming and Critic	al analysis

Year of B.Ed.	2	Semester	Semester 1 Place of lesson in semester 1 2 3 4 5 6 7 8 9 10 11 1								
Title of Lesson			Orthographic projections (first angle Lesson Juration 3 hours								
Lesson description		pictorial arrangem	The Orthographic projection in first angle involves a special representation of objects or pictorial views into two dimensions with the separate sides of the object presented in arrangement of the front elevation and the section view or the cross section on the same axis and the plan projected below the elevation								
Previous student tea knowledge, prior learning (assumed)	acher	• / (They are	 Aware of the fact that those in the fields of Engineering and Building use Orthographic projection in first angle as a working drawing to guide in the manufacturing process in achieving the required solution to a problem. They are also aware that the designs serve the role a communicative guide in the making of many local artifacts 								
Possible barriers to learning in the lesso	'n	• G a • T v	 Fear and anxiety, lack of practical know-how Gender issues in the fact that <i>Graphic Communication is a male dominated skill area.</i> Tutors of Graphic communication may not appreciate the fact that the female who do Graphic communication most often become very successful. Graphic communication not being a vocation for SEN student teachers 								
Lesson Delivery – ch to support students achieving the outco	in	Face- to-face ☑	Practical Activity ☑	Work- Based Leaning	Seminars	Independen t Study	e-learning opportunities	Practicum			
Lesson Delivery – mode of delivery cl to support str teachers in achievin learning outcomes.	hosen udent	first a Use of first a Use g	angle projec concept map angle. g roup discu s	ction. oping to des ssion to ena	scribe the lin	<pre><s and="" connecti<br="">ceachers to disc</s></pre>	identify the views ons of the various uss their strength nprove their com	s views in the s, weakness,			
 Purpose for lesson, what want the studen achieve, serve basis for the lea outcomes. expanded versi the description. Write in full as of the NTS addre 	es as arning An on of spects		and aspirations and use the information to connect to improve their competence. The purpose of this lesson is to introduce student teachers to the specific techniques of presenting drawings in Orthographic projection first Angle.								

 Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	 Demonstr knowledg understar and techn involved i presentin views of a in Orthog projectior angle. 	nstrate edge, standing chniques ed in iting the of artefacts hographic		arning Indicators epare an album of the thographic projection in st angle using different tefacts.	Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed. • Assessment skills, social • skills, communication skills, reflection and honesty. • critical thinking and problem solving, • Gender issues; SEN (therapeutic); • diversity and inclusivity, information literacy	
Topic Orthographic projections (first angle projections)	Topic Sub-topic	Stage, Time		outcomes: depending	activities to achieve learning on delivery mode selected. re group work or independent Student Activity	
	Previous1Knowledge5minutesFirst Angle2and40Third AngleminutesViews ofOrthographiOrthographic ProjectionElevations1			Introduction Tutor introduces the lesson through discussion on First Angle projection based on the student teachers previous knowledge. Video Presentation Tutor present video	Introduction Student teachers participate in the discussion on first angle orthographic projection based on their previous knowledge. Video Presentation Student teachers observe the video on first and third angle projections in Orthographic and participate in the discussion.	
	plans and Cross sections	2 140 minutes		Power Point Presentation Tutor makes power point presentation on the techniques for Orthographic projection in firstangle. Discussion Discuss and explain the specific techniques involved in first and third angles projection	 Power Point Presentation Student teachers observe the steps in the presentation of the techniques. Discussion Discuss and listen to the tutor's explanation on third angle projection techniques. Demonstration Student teachers observe the demonstration of techniques involved in first angle projection. 	

		Demonstration Tutor use differentobjects to demonstrate the first angle projection techniques. Tutor assign student teachers to do a class	Student teachers do class exercise on first angle projection practise. Closure Student teachers listen to the tutor's summary of the lesson to end.		
		exercise on. Closure Tutor summarises the main points of the lesson to close.			
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking	Individual development of portfolio on orthographic projections in first angle. Learning outcome assessed : CLO 6				
to learning outcomes) Teaching Learning	Geometrical Drawing Equipment and Drawing room				
Resources Required Text (core)	 Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 1 (Tools and processes and methodology). Accra Unimax Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers. 				
Additional Reading List	 Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 2 (Tools and processes and methodology). Accra Unimax Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers. 				
CPD Needs	Team teaching ,	ICT skills, Brainstorming and	d Critical analysis		

Year of B.Ed.	2	Semester 1 Place of lesson in semester 1 2 3 4 5 6 7 8 9 10 11 12					9 10 11 12		
Title of Lesson		Orthographic projections (third angle Lesson projections) Duration						3 hours	
Lesson descripti	on	The Orthographic projection in third angle involves a special representation of objects or pictorial views into two dimensions with the separate sides of the object presented in arrangement of the Plan presented above the elevation and end view or the cross section on the same axis.							
Previous studen teacher knowled prior learning (assumed)		•	 Student Teachers are: Aware of the fact that those in the fields of Engineering and Building use Orthographic projection in third angle as a working drawing to guide in the manufacturing process in achieving the required solution to a problem. They are also aware that the designs serve the role a communicative guide in the making of manufacta. 						
Possible barriers learning in the lo		 Fear and anxiety, lack of practical know-how Gender issues in the fact that <i>Graphic Communication is a male dominated skill area.</i> Tutors of Graphic communication may not appreciate the fact that the female who do Graphic communication most often become very successful. Graphic communication not being a vocation for SEN student teachers 							
Lesson Delivery chosen to suppo students in achi- the outcomes Lesson Delive main mode delivery chose support st teachers in ach	ort eving ry – of en to udent	thirdUse of third	angle proj concept m angle.	Leani ng and share jection. apping to d	l rs to enable stu escribe the l	inks and conn	e-learning opportunities s to identify the vie ections of the vario	ous views in the	
	arning	 Use group discussion to enable student teachers discusses their strengths, weakness, aspirations and use the information to connect to improve their competence. 							
 lesson, what want students achieve, ser basis for learning outcomes. expanded value of description. Write in aspects of NTS address 	t you the to ves as the An ersion the full the					student teache	ers to the specific te	echniques of	

 Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outo Demonstr knowledge understan technique in present views of a Orthograp projection angle.	ate Prepare an album of the Orthographic projection in third angle using different artefacts. hic		 Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed. Assessment skills, social skills, communication skills, reflection and honesty. critical thinking and problem solving, Gender issues; SEN (therapeutic); diversity and inclusivity, information literacy 		
Topic Orthographic	Topic Sub-topic	Stage/1	Гime	outcomes: dep Teacher led, col study	ending	activities to achieve learning on delivery mode selected. ve group work or independent
projections (third angle projections)	Previous Knowledge Third Angle Views of Orthographi c Projection Elevations plans and Cross sections	Stage/Time Stage/Time Stage/Time 2 40 minutes 2 140 minutes		Teacher ActivityIntroductionTutor engages stteachers in adiscussion on ThiAngle Orthograpprojection basedtheir previousknowledge.Video PresentatiTutor present viathird angle projein Orthographic aengages studentteachers in a discon Orthographic aengages studentteachers in a discon Orthographicprojection in Thiaangle.PowerpointPresentation&ExplanationTutor makes powpoint presentatthe techniquesinvolved inOrthographicprojection in thirangle.Explain the specttechniques involvedThird angle projeDemonstration&Practise. Tutor use differobjects to	rd hic on deo on ction and cussion rd wer ion on d ific ved in ction	Introduction Student teachers participate in an introduction discussion on Third Angle projection based on their previous knowledge. Video Presentation Student teachers observe the video on third angle projection in Orthographic and participate in the discussion with the tutor. Powerpoint Presentation& Explanation Student teachers observe the steps in the presentation of the techniques and practise. Listen to the tutor's explanation on the techniques. Demonstration &Practise Student teachers observe the demonstration techniques. Student teachers do class exercise in third angle projection.

			demonstrate the third angle projection techniques. .Tutor assign student teachers to do a class exercise in third angle projection. Closure Tutor reflects on the main points of the lesson to close.	Closure Student teachers listen to the tutor's summary to end the lesson.	
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)	 Individual development of portfolio on orthographic projection of artefacts in third angle. Learning outcome assessed : CLO 6 				
Teaching Learning Resources	Geometrical Drawing Equipment and Drawing room				
Required Text (core)	Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 1 (Tools and processes and methodology). Accra Unimax Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers.				
Additional Reading List	 Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 2 (Tools and processes and methodology). Accra Unimax Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers. 				
CPD Needs	Team	teaching , ICT skills	, Brainstorming and Critic	al analysis	

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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	Methods and resources for teaching graphic communication. Lesson Duration 3 hours					n 3 hours
The methods and teaching resources for Graphic communication involve teaching syllabus, lesson order, scheme of work, information sheet and the appropriate and relevant methods of teaching						
Student Teachers are: Aware that identification of good methods and appropriate resources are necessary for effective teaching of topics under the introduction to Graphic communication.						
 Fear and anxiety, lack of practical know-how of the techniques involved in Graphic communication Gender issues in the fact that <i>Graphic Communication is a male dominated skill area.</i> Tutors of Graphic communication may not appreciate the fact that the female who do Graphic communication most often become very successful. 						
Face- to-face	Practical Activity	Work- Based Leaning	ng a vocation	Independe nt Study		Practicum
 Use think, pair and share to enable student teachers identify all the teaching resources ,their uses and the skills involved developing them. Use concept mapping to describe the links and connections of the various teaching resources and methods of teaching. Use group discussion to enable student teachers discuss their strengths, weakness, aspirations and use the information to connect to improve their competence. 						
					· ·	-
	syllabus, relevant Student Awa • Fear com • C • C • T Graphic o • T Graphic o • T • Use t resou • Use t resou • Use t resou • Use t resou	communication The methods and teal syllabus, lesson order relevant methods off Student Teachers are and anxiety for effective communication Student Teachers are and anxiety communication • Fear and anxiety communication • Gender issue area. • Tutors of Graphic communication Graphic communication Mo do Grap Graphic communication Mo do Grap Graphic communication Mo do Grap • Use think, pair a resources , their of are concept map resources and m • Use group discue aspirations and u • The purpose of this lates and the purpose of the pur	communication. The methods and teaching resolusions syllabus, lesson order, scheme of relevant methods of teaching. Student Teachers are: Aware that identification of for effective teaching communication. Fear and anxiety, lack of p communication. • Fear and anxiety, lack of p communication • Gender issues in the far area. • Tutors of Graphic communication not bein who do Graphic communication not bein graphic communication not bein who do Graphic communication not bein who do Graphic communication not bein who do Graphic communication not bein graphic communication not bein who do Graphic communication not bein who do Graphic communication and share to resources the information of the second seco	communication. The methods and teaching resources for Grassyllabus, lesson order, scheme of work, infor relevant methods of teaching. Student Teachers are: Aware that identification of good meth for effective teaching of topic communication. Fear and anxiety, lack of practical know communication. • Fear and anxiety, lack of practical know communication • Gender issues in the fact that Grap area. • Tutors of Graphic communication most graphic communication not being a vocation Graphic communication most graphic communication not being a vocation Face- Practical Activity Based Leaning • Use think, pair and share to enable stude resources ,their uses and the skills involv • Use concept mapping to describe the lini resources and methods of teaching. • Use group discussion to enable student to aspirations and use the information to colspan="2">Activity aspirations and use the information to col	communication. The methods and teaching resources for Graphic communication sheet relevant methods of teaching. Student Teachers are: Aware that identification of good methods and approfor effective teaching of topics under the communication. • Fear and anxiety, lack of practical know-how of the communication • Fear and anxiety, lack of practical know-how of the communication • Gender issues in the fact that Graphic Communication area. • Tutors of Graphic communication may not apprewho do Graphic communication most often becom Graphic communication not being a vocation for SEN stude Face-to-face Practical Work-Based Leaning Independe nt Study • Use think, pair and share to enable student teachers ic resources , their uses and the skills involved developing Use concept mapping to describe the links and connect resources and methods of teaching. • Use group discussion to enable student teachers discus aspirations and use the information to connect to impri	Communication.The methods and teaching resources for Graphic communication involve teacsyllabus, lesson order, scheme of work, information sheet and the appropriarelevant methods of teaching.Student Teachers are:Aware that identification of good methods and appropriate resources for effective teaching of topics under the introduction communication.• Fear and anxiety, lack of practical know-how of the techniques involv communication• Gender issues in the fact that Graphic Communication is a male de area.• Tutors of Graphic communication may not appreciate the fact that who do Graphic communication most often become very successful.Graphic communication not being a vocation for SEN student teachersFace- ImagePractical Based LeaningWork- Based ImageSeminars Independe nt Study• Use think, pair and share to enable student teachers identify all the teac resources , their uses and the skills involved developing them.• Use group discussion to enable student teachers discuss their strengths, Use group discussion to enable student teachers discuss their strengths,

Learning Outcome for the lesson, picked and developed from the course	Learning Outcomes	Learnii	ng Indicators	Identify which cross-cutting issues - core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed.	
specification • Learning indicators for each learning outcome	 Demonstrate knowledge, understanding and techniques of developing teachin resources and using appropriate method for teaching Graphi communication. 	resourd video r teachir g method ds	e an album of teaching ces , and present group ecording of micro ng using the appropriate ds.	 Assessment skills, social skills, communication skills, reflection and honesty. critical thinking and problem solving, Gender issues; SEN (therapeutic); diversity and inclusivity, 	
Topic Methods and	Topic Sub-topic	Stage/Tim e	outcomes: depending	activities to achieve learning on delivery mode selected. oorative group work or	
resources for			Teacher Activity	Student Activity	
communication.	teaching graphic communication. Previous Knowledge		Introduction Tutor introduces the lesson on the methods and resources for teaching Graphic Communication based on student teachers previous knowledge.	Introduction Student teachers participate in the introduction discussion on the methods and resources for teaching Graphic Communication based on their previous knowledge.	
	 Resources: a. Teaching syllabus b. Lesson order c. Scheme of work d. Lesson plan e. Information sheet 1. Teaching methods a. Demonstration b. Illustration 	2 45 minutes	Video Presentation Tutor presents video on the appropriate resources and methods of teaching for teaching and learning of Graphic communication. Group Discussion Organize student teachers into groups to discuss the video presentation.	Video Presentation Student teachers observe the video on teaching and learning resources and methods of teaching. Group Discussion Student teachers organise themselves into groups to discuss the video presentation.	
	c. Discussion d. Brainstormin g e. Project.	3 30 minutes	Interactive Lecture Tutor gives an interactive lecture on the preparation of the various teaching resources.	Interactive Lecture Student teachers listen to tutors lecture on the preparation of the various teaching resources.	

		4 70 minutes	Demonstration&Pract ise Demonstrate the techniques involved in preparing the various teaching resources and ask them to practice.	Demonstration&Practise Student teachers observe the tutors demonstration of the preparation of teaching resources and practise.	
		5 30 minutes	Interactive Lecture Tutor gives an interactive lecture on the effectiveness of the teaching methods	Interactive Lecture Student teachers listen to the lecture on the effectiveness of the teaching methods.	
			Micro Teaching Guide the student teachers through micro teaching for practice.	Micro Teaching Student teachers observe the micro teaching and practise.	
			Closure Tutor summarises the key points of the lesson and close.	Closure Student teachers listen to the tutor's summary to end the lesson.	
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (linking to learning outcomes)	Learning outcome asses	ssed : CLO 6 n of videos c	blio on the various teaching .	ng resources.	
Teaching Learning Resources	Geometrical Drawir	ng Equipmen	t and Drawing room.		
Required Text (core)	Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 1 (Tools and processes and methodology). Accra Unimax Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers.				
Additional Reading List	 Amoakohene, S.K. et al (1998). Technical skills and drawing for teacher training book 2 (Tools and processes and methodology). Accra Unimax Maguire D. (1998). Engineering Drawing from first principles using AutoCAD. London: Arnorld Publishers. 				
CPD Needs	Team teaching , ICT skills, Brainstorming and Critical analysis Mastery of the sequence through constant practise				
Course Assessment	Component 1:Subject Portfolio Assessment (overall score = 30%) Selected items of students work (3 of them=10% each) Written Assignment Group Presentation 				

•	Individual Presentation Midterm assessment/Quiz=20% Reflective Journal =40% Organisation of the Portfolio = 10% (how it is presented/
	organized)
Weighting	g :30%
Assesses	earning Outcomes ; CLO 1,2,3,4,5 and 6
Compone	nt 2 : Subject Project(30% overall assessment)
Task stud	ent teachers to design a survey instrument to collect data on their peers
perce	ption of various ATR beliefs. Should be analysed and the outcome used
to cre	ate a poster to be presented during the 11 th lesson.
•	Introduction; clear statement of aim and purpose= 10%
•	Methodology : what the student has done and why= 20%
•	Substantive or main sections= 40%
•	Conclusion = 30%
Assesses	earning Outcomes ; CLO 2,3,4 and 6
	of Semester Examination =40%
Assesses	earning Outcomes ; CLO 1,2,3,4,5 and 6

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