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1.0 REVISED BACHELOR OF EDUCATION (PRIMARY EDUCATION) PROGRAMME

2.0 TITLE OF DEGREE: Bachelor of Education (Primary Education)

3.0 RATIONALE

Basic Education constitutes the foundation for the development of human resource for the socio-economic development of any country. It is for this reason that the Government of Ghana continues to allocate a lot of resources to the development of quality Basic Education. The Bachelor of Basic Education programme has been the traditional programme through which both Primary and Junior High School teachers are trained for Ghanaian basic schools. However, the current debate on teacher education at the basic school level in Ghana points to the need to separate the training of primary school teachers from junior high school teachers to enable the prospective primary school teacher acquire the pedagogical skills needed to operate effectively as a primary school teacher (MoE, 2017). Development of quality primary teacher education programme to turn out quality primary school teachers who will able to provide all learners, irrespective of their gender, social, cultural, linguistic and ethnic background with the opportunity to acquire the appropriate knowledge, skills, values and attitudes has therefore become paramount. It is against this background that the Four-Year Bachelor of Education (Primary Education) Programme run by the University of Cape Coast and its affiliate Colleges of Education has been designed to help teacher-trainees acquire the necessary knowledge and skills they need to provide more authentic pedagogical contexts and activities that would help pupils to learn how to learn and become independent lifelong learners. In keeping with global trends and the demand for more learner-centred approaches to teaching, coupled with the significant challenges most Ghanaian school children face in the acquisition of functional literacy, numeracy and problem solving skills, this rationale becomes very significant.

4.0 PROGRAMME GOAL AND OBJECTIVES

4.1 Goal

The programme aims to train pre-service primary school teachers to:

1. become professional teachers who are well-equipped with knowledge, pedagogical skills and the disposition to learn and guide their pupils to meet their learning needs.
2. have a clear grasp of the intended outcomes of their teaching activities to enable them assess learning and provide equal opportunity to all pupils.
3. promote close working relationship between the University, its affiliate Colleges of Education and local schools through Supported Teaching in Schools in order to expose teacher-trainees to hands-on-experience.

4.2 Objectives

The programme seeks to train teachers who will be able to teach all core subjects at the primary level and also specialize in one subject area at that level. The programme therefore specifically seeks to train:

1. generalist teachers to teach Basic Numeracy, Literacy, Integrated Science and Citizenship Education/Environmental and Social Studies at the primary level and
2. specialist teachers in English, Mathematics, Science, Ghanaian Language, ICT, Vocational Skills, Religious and Moral Education, Music and Dance, Physical Education and Citizenship Education/Environmental and Social Studies.

5.0 TEACHING PHILOSOPHY

The primary idea driving the philosophy of teaching prescribed in the delivery of this curriculum is a belief that skill and conceptual understanding are legitimate goals of instruction, in that each builds on the other, and therefore both need to be sought after together in teaching. To achieve this, tutors need to bear in mind that student teachers would understand what they teach if they are provided with the opportunity to connect the new experience to an already existing schematic structure that rightly relates to it and that even a skill can be learnt with meaning. The implication is that tutors are encouraged to rely on relevant and appropriate indigenous knowledge that student teachers bring to the programme.

In addition, we propose that we can aid our pre-service teachers' conceptual understanding if we are able to get them to reflect on their thinking and communicate that learning in meaningful ways to their peers. As a result, the teaching philosophy in this curriculum is to use socio-constructive approaches in our classes to support our students in pursuing both goals (i.e., conceptual understanding and skill development) in their courses in a reflective approach.

In all these, we believe that enacting socio-constructive methodologies in teaching can be aided by the infusion of modern technology. Consequently, we have a commitment to utilizing emerging technologies in the classroom. In other words, we encourage tutors never to hesitate to learn about any prevailing technology and use it to support their teaching. Therefore, in this curriculum, teaching approaches that promote knowledge formation, cognitive and character development, critical thinking and problem solving are encouraged in order to inculcate the right values and attitudes in prospective teachers, as envisaged in the National Teacher Education Curriculum Framework (NTECF) and the National Teachers' Standards (NTS). Decisions tutors take in the teaching and learning situations must be informed by a sound philosophical perspective. Teaching methods

such as use of: discussion, jig-saw, project- and problem-based approaches to teaching, investigations, concept maps, interactive teaching and learning approaches will be used in the programme. Thus, tutors using this curriculum should endeavour to employ varied and appropriate teaching approaches that are grounded in the modernist and post-modernist psychology.

6.0 ASSESSMENT PRACTICES

Various assessment strategies that promote assessment for learning, assessment as learning and assessment of learning have been employed in the assessment of each of the courses in the programme, as required by the National Teacher Education Curriculum Framework (NTECF). Assessment is therefore made up of two main components. These are; (1) Formative Assessment, which aims to promote assessment for learning and assessment as learning. This includes class projects, presentations, assessment of students' portfolios, journals and quizzes and (2) Summative Assessment which serves the purpose of assessment of learning. This includes End-of-Semester Examinations and assessment of project work and other forms of practicum.

The end-of-semester examinations should comprise both multiple choice and open-ended (essay type) tests. Questions composed for each of these tests should be based on some of the important objectives and content covered during the semester in focus. In addition, each component of the end-of-semester examination must be constructed from well-developed test blue prints.

In this curriculum, tutors are encouraged to consider each specific objective not only as the focus of instruction but also as a criterion to be mastered by students and for assessment purposes. The university of Cape Coast also believes that no single assessment can guarantee test items based on all the specific objectives covered within the semester or academic year. Thus, invariably representative samples of all the specific objectives for each course need to be taken in constructing any form of assessment of students' learning. Consequently, to ensure that both low order knowledge and high order knowledge are assessed, the table of specification is recommended to guide the composition of end-of-semester assessments.

Assessment of each of the courses in the programme has been done in relationship to the National Teachers Standards (NTS). In order to ensure uniform weighting across programmes, and also to ensure that the weightings reflect the University's policy on assessment, 40% of the assessment must go into the Formative Assessment, while 60% goes into Summative Assessment.

It is envisaged that the major learning outcomes to be assessed would be performance-based. In addition, the major student outcomes must be identified using the course objectives as the basis for assessing student learning. Emphasis must be placed on the following student outcomes: Critical Thinking (instead of limiting items to those that elicit rote memorization of

materials) and Problem solving (by using contextual items). Assessment must also address issues relating to inclusivity and other cross cutting issues.

7.0 DATE OF COMMENCEMENT:

October 2018

8.0 TARGET GROUPS/ADMISSION REQUIREMENTS

8.1 Target Groups

The groups targeted for the programme include the following:

1. Senior High School leavers
2. Untrained Basic School teachers
3. Certificate "A" teachers

8.2 Admission Requirements

The admission requirements for Senior Secondary School Certificate Examination (SSSCE) holders are:

1. six passes (A – C) in all subjects, including English Language and Mathematics; and
2. at least three (3) of the passes must be relevant to the area of specialization.

The admission requirements for West African Secondary Certificate Examination (WASSCE) holders are:

1. six passes (A1-C6) in all subjects, including English Language and Mathematics; and
2. must possess a minimum of C6 in any three (3) of the passes relevant to the area of specialization.

Admission requirements for Matured Applicants must:

1. be at least, **Twenty-Five (25)** years old by 31st December, in the year the application is made. A copy of applicant's birth certificate issued not less than **five (5)** years from the day of completing the application form should be closed with the application materials.
2. have any one of the following:
    - Minimum of Senior High School of Certificate

- Teacher's Cert 'A'

NB. Applicants who do not have credit passes in English and Mathematics at either SSSCE/WASSCE OR GCE 'O' Level would be required to register for and pass special examinations in those subjects.

9.0 PROGRAMME STRUCTURE AND CONTENT OF THE BACHELOR OF EDUCATION (PRIMARY EDUCATION) PROGRAMME

The B. Ed (Primary Education) to be run at the Colleges of Education by the University of Cape Coast is a four-year, eight semester programme. The curriculum is therefore structured into eight semesters in which trainees will spend seven semesters on campus and one semester out of campus for practicum. Trainees will spend the seventh semester out of campus. Supported Teaching in Schools will be done every semester. However, six will be done in schools and two on College campus. The context and the rationale are provided in the course descriptions.

The programme is developed based on the four pillars outlined in the National Teacher Education Curriculum Framework (NTECF), namely Subject and Curriculum Knowledge, Pedagogic Knowledge, Literacy Studies (Ghanaian Languages and English) and Supported Placement in Schools. Courses covered in the curriculum therefore reflect each of these areas. Also covered in the curriculum are the Core Skills, namely: Professional Values and Attitudes, Equity and Inclusivity, Assessment Strategies, Core and Transferable Skills (including inquiry/problem-solving) and ICT. Specific aspects of the National Teachers' Standards (NTS) each course seeks to address in order to turn out the kind of effective, engaging and inspirational teachers envisaged in NTECF are highlighted in each course.

While the NTECF proposes the training of teachers for P4-P6, the UCC B. Ed (Primary Education) curriculum is structured to prepare teachers to teach from P1-P6. The reasons are, first, to prepare teachers to be able to handle P4-P6 pupils who are operating at the P1-P3 level due to cognitive delay, and second, to ensure that teachers are prepared for multi-grade teaching, since some school contexts in Ghana, especially in rural areas, usually require one teacher to teach at both upper primary and lower primary levels. In addition to training in the core content areas covered in the primary school curriculum, the programme is also structured to provide trainees the opportunity to specialize in one subject area at the primary school level for the purposes of progression from first degree to postgraduate degree and to be able to teach in school contexts where subject teaching is done at the primary school level. Granted that the programme aims to prepare trainees to be able to teach from P1-

P6, the curriculum is structured to offer courses for both P1-P3 and P4-P6 training as shown in Figure 1. Detailed semester by semester courses in the eight-semester structure is provided below in Figure 1.

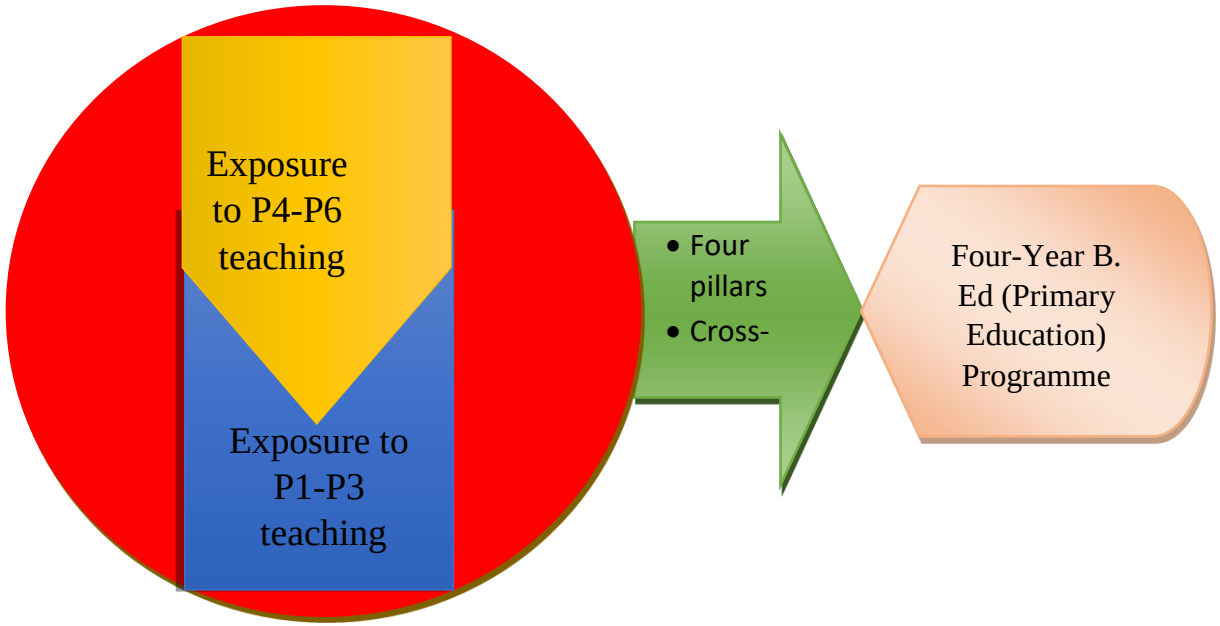

Figure 1: The structure of the B. Ed (Primary Education Curriculum)

YEAR ONE, SEMESTER ONE

Course Code	Course Title	Credits	Pillar	Learning Area
EBS 108	Language and Linguistics	3	SCK/LSE	Literacy
EBS 101	Algebra I	3	SCK	Numeracy
EBS 103	General Biology	3	SCK	Science
EBS 118	Information Literacy Skills	1	Cross Cutting	Creative Skills
EBS 107	Computer Literacy	3	Cross Cutting	Creative Skills
EBS 106	Child Development and Learning	2	PK	Pedagogy
EBS 125	Principles and Practice of Education	2	PK	Pedagogy
EBS 191	Field Experience I	3	Supported Teaching in School	Pedagogy
Elective Courses*				
EBS 113	General Agriculture I	3	SCK	Agricultural Science
EBS 123	Philosophical and Psychological Foundations of RME	3	PK	Religious and Moral Education
EBS 110	Foundations of Physical Education	3	SCK	Physical Education
EBS 122	Performing Arts (and Society)	3	SCK	Music and Dance
EBS 121	Literature in English - Studies in African Poetry	3	SCK	Literacy
EBS 130	Basic Design	3	SCK	Vocational Skills
EBS 109	Fundamentals of IT Education	3	SCK	ICT

EBS 114	General Biology Theory I	2	SCK	Science
EBS 114P	General Biology Practical I	1	SCK	Science
EBS 102	Algebra II	3	SCK	Numeracy
EBS 120	Linguistics of the Ghanaian Language	3	SCK	Literacy
EBS 157	Introduction to Social Studies	3	SCK	Social Studies
Total Credits		**23**		

YEAR ONE, SEMESTER TWO

Course Code	Course Title	Credits	Pillar	Learning Area
EBS 143	Geometry & Trigonometry	3	SCK	Numeracy
EBS 135	English Language Studies I	3	SCK/LSE	Literacy
EBS 132	General Chemistry	3	SCK	Science
EBS 147	HIV/AIDS and other Endemic Diseases in Africa	1	SCK	General Studies
EBS 137	Ghanaian Language and Culture: Cultural Studies	2	SCK	Social Studies (Ghanaian Language)
EBS 157	Social Studies and Human-Land Issues	2	SCK	Environmental and Social Studies
EBS 158	Studies in Literature I – Prose	3	SCK/LSE	Literacy
EBS 192	Field Experience II	3	Supported Teaching in School	Pedagogy
Electives				
EBS 151	Literature in Ghanaian Language and Culture	3	SCK	Literacy
EBS 140	General Agriculture II	3	SCK	Agricultural Science
EBS 159	The Natural Environment	3	SCK	Environmental and Social Studies
EBS 128	African Traditional Religion	3	SCK	Religious and Moral Education
EBS 129	Athletics for Basic Schools	3	SCK	Physical Education
EBS 154	Nature of Performing Arts	3	SCK	Music and Dance
EBS 149	Literature in English II – Studies in Poetry	3	SCK	Literacy

EBS 160	Creative and Perception	2	SCK	Vocational Skills
EBS 142	General Physics Theory I	2	SCK	Science
EBS 142P	General Physics Practical I	1	SCK	Science
EBS 132	General Chemistry Theory I	2	SCK	Science
EBS 132P	General Chemistry Practical I	1	SCK	Science
EBS 145	Geometry II	3	SCK	Numeracy
EBS 169	Trigonometry	3	SCK	Numeracy
EBS 168	Learning Theories for Teaching Computers	2	SCK	ICT
Total Credits		**23**		

YEAR ONE **SEMESTER ONE**

LANGUAGE AND LINGUISTICS

CONTEXT

The goal of the course is to sustain an unwavering focus on developing knowledge, skills, pedagogy and essential understanding required of a good English teacher to teach English Language and Literature in English from Early Childhood through to the Junior High School in Ghana. The course is to equip the student-teacher with an understanding of contemporary theories, concepts and practices in English Studies and teaching in enhancing literacy. The English courses introduce the student-teacher to the basics of language acquisition skills as well development strategies. The skills: listening, speaking, reading and writing, are given premium throughout the student-teacher's training. These skills are crucial for their academic endeavours, which they will further impart to the Ghanaian child. Though the current teacher training curriculum addresses it, intensifying it comes with numerous advantages to all stakeholders of Ghanaian education. The courses are designed in a manner that the sub-disciplines complement one another. There are ICT components imbedded in the teaching-learning activities to facilitate interactive and learner-focused approach. There is a symbiotic approach in the training of the teachers; as the trainees acquire these skills for personal use and also impart to the students.

The detailed course descriptions and objectives pay attention to the individual courses and attempt to draw synergy from "The National Teacher Education Curriculum Framework" and "National Teachers' Standards for Ghana Guidelines". The assessment portfolios would pay heed to Bloom's Taxonomy of higher level questioning.

Course Title	**Language and Linguistics**						
Course Code	**EBS 108**	**Course Level:**	**100**	**Credit Value:**	**2**	**Semester**	**1**
Pre-requisite	**Students have basics in the concepts from senior high school.**						
Course Delivery Modes	**Face -to –face X**	**Practical Activity X**	**Work-Based Learning [3]**	**Seminars [4]**	**Independent Study X**	**e-learning opportunities X**	**Practicum [7]**
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This introductory course aims at improving students' competence in some areas of language and linguistics. It takes a look at some definitions, properties and features of human language. The course also discusses elements of communication and the skills necessary for effective communication. Other areas covered by the course include the differences between speech and writing. The course includes speech work which will expose students to the different speech sounds of English language and help them to identify as well as describe the various speech sounds and be able to articulate them in isolation, in individual words and in connected speech. This course will equip student teachers with the requisite skills in using language in communication in the social context and subsequently pass on the correct communication forms to their pupils later on. Student-teachers will have the opportunity of visiting real classrooms to observe pupils as they communicate with one another so as to familiarise themselves with pupils' language errors so that they learn how to use these pupil-errors in planning their lessons. The mode of delivery for this course will be discussions, group work, audio-visuals and individual work. Students' personal experiences that relate to the course will be brought on board for analysis and discussion. Assessment will be done through quizzes, report writing, assignments and examinations. The course is in line with (NTECF bullets 1,5, and 7; p. 25. NTS 1a and b, p 12; 2c, p 13)						
Course Learning Outcomes [8]: including indicators for each learning outcome	**On successful completion of the course, student teachers will be able to:**					**Indicators**	
	1. define and explain the properties and functions of language (NTS 2c)					1.1 define language. 1.2 Identify the properties of language. 1.3 Explain the properties of language	
	2. use the productive and receptive skills in their communication activities (NTECF bullet 3 and 5, p. 25; NTS 2c p.13)					2.1 identify the language arts/skills 2.2 discuss the productive skills/arts. 2.3 discuss the receptive skills 2.4 draw the linkages between the productive skills and the receptive skills.	

	3. describe speech sounds used in English (NTECF bullet 7, p. 25; NTS 2c p.13)			3.1 discuss the speech sounds in English. 3.2 discuss in small groups the vowel chart. 3.3 use correct pronunciation and stress in sounding out words during reading.
	4. explain how words are related to each other and use them appropriately. (NTECF bullet 5, p. 25; NTS 2c p.13)			4.1 demonstrate how words are related to each other 4.2 demonstrate the appropriate use of words that are related to each other
	5. reflect on pupils' language errors and plan on how to resolve them. (NTECF bullets 1, and 7, p. 25; NTS 1a, b p.12; NTS 2c p.13)			5.1 conduct observation in primary classrooms and write observation report based on pupils' language errors 5.2. reflect on observation reports and discuss what can be done to make teaching better in basic schools.
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	1. What is language? 2.0. Communication 3.0 Speech Work 4.Speech Sounds	1. Some definitions of language: Look at the definitions by Edward Sapir, David Crystal, Bloomfield, and study the common features 2. Properties of language a. Displacement b. Arbitrariness c. Productive d. Cultural Transmission e. Discreteness (Separateness) 3. The peculiar features of human language	Lead students to brainstorm on the concept of language. Guide them to identify the salient ingredients in the definitions by Sapir, Crystal and Bloomfield. Guide students to identify and discuss the features of language. Lead students to relate their findings with sub topic 2. Discuss the peculiar features of human language in the light of the above Relate their findings to Jacobson's and discuss his views with them. In groups, guide students to discuss the uses of

		(1)	4. Functions of language (Roman Jakobson's six functions of language) a. The Referential Function b. The Expressive (alternatively called "emotive" or "affective") Function c. The Conative Function d. The Poetic Function e. The Phatic Function f. The Metalingual (alternatively called "metalinguistic" or "reflexive") Function:	language. Lead students to discuss the two concepts and bring out the differences. Discuss the features of each. Review the discussion on Jakobson's uses of language. Discuss possible definitions from authoritative sources.
		5.Speech Sounds (2)	5. Differences between speech and writing (Order of importance) a. Historical priority b. Biological priority c. Structural priority d. Functional priority	Illustrating with Jakobson's communication model, guide students to explain these terms in communication. Discuss how an effective communication is assessed. Review the discussion on communication
		6.Lexical Relations	6. Characteristics of speech and writing a. Definition of communication b. Elements of communication – addresser, addressee, message, code, c. channel, interference, etc. Skills necessary for effective communication. The receptive and productive skills. 1. Definition of speech 2. The importance of speech 3. Organs of speech	Provide an illustration of the organs of speech. Discuss their primary functions Discuss the secondary functions as in speech production Guide students to produce the vowel sounds. Guide them to describe their observations. Discuss the vowel. Illustrate the chart to describe the vowel. Discuss the types of vowel with illustrations. Guide students to produce the consonant sounds. Guide them to describe their observations. Discuss

			1. Vowels 2. Definition of vowels 3. Description of vowel sounds. The International Phonetic Chart (IPA) 4. The English Vowel Chart: pure vowels, etc. 5. Vowel glides: diphthongs and triphthongs Minimal Pairs 1. Consonants 2. Definition 3. Description of consonant sounds: ✓ Voicing ✓ place of articulation manner of articulation Lexical Relations ✓ Synonymy ✓ Antonymy Homonymy	the consonants. With illustrations, guide students to describe the consonants according to place, manner and voicing. Using word games on the phones, guide students to ascertain the relations between words. Illustrate with words in sentences and as lexemes.
Course Assessment Components[9]: (Educative assessment of, for and as learning)	Component 1: Formative assessment (40%) Summary of assessment methods: Individual assignments- concept of language (10%); group projects- vowels (10%); group presentation- consonants (10%) and a quiz – communication and lexical relations (10%) Assessing Learning Outcomes: 1, 2, 3, 4 and 5. Component 2: Summative assessment: (60%) End of semester examination on units 1 – 6 to develop core skills such as knowledge application and personal development Assessing Learning Outcomes: 1, 2, 3, 4 and 5.			
Instructional Resources	Projectors and computers, Audio-visuals and Phones			

Required Text (core)	Crystal, D. (2000). *Cambridge encyclopaedia of language*. (2nd ed.). Cambridge: Cambridge University Nunan, D. (2003). *Practical English language teaching*. New York: McGraw-Hill.
Additional Reading List [10]	Rozakis, L. E. (2003). *Grammar and style*. Indiana: Alpha Books. Sekyi-Baidoo, Y. (2005). *Effective learning and communication*. Accra: Akonta Publications. Takor, D. (1999). *Semantics*. New Delhi: Bharati Bhawan. Yule, G. (1996). *The study of language*. (2nd ed.). Cambridge: CUP.

ALGEBRA I

CONTEXT

The mathematics curriculum provides student teachers with a background in the theory and application of the content needed to understand the underlying structure and nature of mathematics.

In addition, it exposes student teachers to the content knowledge needed in preparing them sufficiently to teach mathematics beyond what they will be expected to teach at the basic education level.

The demands of rapid change in an information- based society today have influenced mathematics programs in various ways. The skills needed for jobs require thoughtful workers who are oriented to problem solving, irrespective of their gender, cultural and socio-economic backgrounds. By studying mathematics, students are taught to reason, to analyze, to think for themselves, while it imparts confidence in their own reasoning powers, and strengthens their mental faculties. Students need to use rules and thought processes of mathematics along with facts, to develop a reasoning pattern that will translate to their everyday lives, making them better thinkers and problem solvers.

It is important for students to view mathematics as a significant part of our culture, not only for its valuable scientific applications but also for its enrichment of our cultural life.

This mathematics curriculum is, therefore, intended to equip student teachers with the knowledge, skills and values needed to teach mathematics to basic school pupils in everyday life context. Besides, it provides the requisite resource material for preparing student teachers to teach mathematics sufficiently and effectively in our basic schools.

Course Title	**ALGEBRA 1**						
Course Code	**EBS 101**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**1**
Pre-requisite	**Students have knowledge of basic algebra in SHS core Mathematics**						
Course Delivery Modes	**Face -to -face** [1] ✓	**Practical Activity** [2] ✓	**Work-Based Learning** [3] ✓	**Seminars** [4]	**Independent Study** [5] ✓	**e-learning opportunities** [6] ✓	**Practicum** [7] ✓
Course Description for	The course is designed to deepen students' understanding of Algebra. Students will be exposed to the following topics: Applications of Sets, Binary operations, Ratio, Proportions and Rates, Number bases and their						

significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	applications, Indices and Logarithms, Functions, Algebraic expressions and Equations (Linear, Quadratic), Linear Inequalities. Emphasis will be made on the practical applications of these topics through the use of word problems and semester projects. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity. (NTS 1a, 1b, 2c, NTECF Pillar 1, (p. 21), P. 39, P.45)			
Course Learning Outcomes [8]: including INDICATORS for each learning outcome	**Outcomes** By the end of the course, the student will be able to:			**Indicators**
	1. demonstrate a sound understanding of concepts and procedures covered in the algebra course (NTS 1a. 1b, 2c)			• Show relational understanding of specific topics learnt in the course • Solve simple problems on the topics covered.
	2. apply the concepts learnt to solve real life problems (NTS1a. 1b, 2c)			• Apply knowledge of specific topics learnt in the course
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	• **Teaching and learning activities to achieve learning outcomes**
	1	Binary operations	Properties of binary operations i.e. closure, commutative, associative and distributive. Finding identity elements and inverses	Engage students in activities to explore the closure, commutative, associative and distributive properties of binary operation on real numbers Use cooperative learning groups to engage students to identify the identify elements and inverses for defined binary operations
	2	Applications of Sets	Subsets, operations, complement of a set, and solutions of two- and three-set problems.	Use real life situations in class for students to determine subsets of given sets, complements of sets, perform operations on sets and solve two- and three- set problems
	3	Ratio, Proportions, Percentages	Concepts of ratio and proportion, percentages, rates	Create contexts for ratio, proportion, rates and percentages to enable students gain an in-depth knowledge of the concepts and apply knowledge of these concepts in solving real life

		and Rates	and their applications.	problems e.g. VAT, depreciation, interest, profit and loss, commission, etc
	4	Number bases and their applications	Number bases up to 12; Application of number bases. Solving equations involving number bases e.g. $243_x = 201$	Involve students in activities which will enable them to count objects and write numbers in various number bases, perform basic operations. Provide worthwhile tasks on simple equations involving number bases for students to solve
	5	Indices and Logarithms	Laws of indices, negative indices, simple equations involving indices; definition of logarithms, laws of logarithms and simple equations involving logarithms.	Use cooperative learning groups to engage students explore and discover the laws if indices, and logarithms and to apply the laws in solving simple problems
	6	Relations and Functions	Relations, mapping and functions; types, domain, co-domain, images, range; inverse of simple functions, algebra of functions, composition of two functions e.g. gof, fog, graphs of functions	Create appropriate contexts for students to distinguish between the various types of relations and functions, find the domain, codomain and inverses of given functions. Provide contexts for composition of functions, perform addition, subtraction, multiplication and division of functions. Use ICT tools to guide students to explore the nature of given functions by graphing
	7	Algebraic expressions and Equations	Factorization of algebraic expressions up to four terms, solving simple linear	Use algebra tiles to guide students to factorize algebraic expressions (linear and quadratic) and to expand products of two binomials up to the form (ax +b)(x + a). Use ICT tools to guide students to explore the nature of

		Linear, Quadratic,	equations, Graphs of linear and quadratic equations, Solving simultaneous linear equations involving two variables by graphical, elimination and substitution approaches. Solving word problems involving simple linear equations.	graphs of linear and quadratic graphs and find solution of linear, quadratic and simultaneous linear equations involving two unknowns. Encourage students to compare solutions by different methods, e.g elimination, substitution and graphical approaches. Expose students to various problems solving strategies to equip them to tackle word problems
	8	Linear Inequalities	Solving simple linear inequalities, Graphs of linear inequalities, solving word problems involving linear inequalities.	Create contexts for linear inequalities and guide students to solve simple real life problems on linear inequalities. Expose students to the use of ICT tools to explore the nature of graphs of inequalities.
Course Assessment Components[9]: (Educative assessment of, for and as learning)	**Component 1: Formative Assessment (Individual and Group presentations)** **Summary of Assessment Method:** Critical Thinking, problem solving skills, creative and innovative skills, life-long learning/ personal skills, collaborative/ social skills, communication skills, literacy and numeracy skills, leadership skills, digital literacy/ICT skills (NTECF p. 45**)** • Presentations Weighting (10%) Assesses Learning Outcomes: CLO 1 (Units 7 and 8)			
	Component 2: Formative Assessment **Summary of Assessment Method:** Critical Thinking, problem solving skills, creative and innovative skills (NTECF p. 45**)** • Assignments • Class exercises			

	• Quizzes Weighting (30%) Assesses Learning Outcomes: CLO 1 & 2 (Units 1, 3, 5 and 6)
	Component 3: Summative Assessment **Summary of Assessment Method:** End of Semester Examinations Unit 1 – 8 (Core skills to be developed: Critical Thinking, problem solving skills, creative and innovative skills (NTECF p. 45**))** Weighting (60%) Assesses Learning Outcomes: CLO 1 & 2
Instructional Resources	Algebra tiles, Geoboard/geodot, ICT tools including calculators and computers
Required Text (core)	Asare-Inkoom, A. (2012). *Further/elective Mathematics for Senior Secondary Schools (Vol.1)*. Cape Coast, Hampton Printing Press. Martin, J. L. (1994) *Mathematics for teacher training in Ghana- students' activities and tutor's notes.* Accra: Unimax Macmillan Ltd.
Additional Reading Lists	Backhouse, J. K., & Houldsworth, S. P. T. (1985). *Pure mathematics 1*. England: Pearson. Barnett, R. A., Ziegler, M. R., & Byleen, K. E. (2008). *College Algebra with Trigonometry*. New York, McGraw-Hill. Backhouse, J. K. & Houldsworth, S.P.T (2005). *Pure Mathematics 1*. London, Longman. Larson, R. E., Kanold, D. T., & Stiff, L. (1993). *Intermediate algebra*. Canada: D. C. Heath and Company. Ofosu, J. B. (2001). *A comprehensive SSS course in elective Mathematics*. Accra: Afram Publication. Swokowski, E. W. & Cole, J. A. (2005). *Precalculus: Functions and Graphs (10th ed.)*. Canada, Thomson Brooks/Cole. Turner, L. K., & Knighton, D. K. (1986). *Advanced algebra 1* (2nd ed.). England: Longman.

GENERAL BIOLOGY

CONTEXT

Biology at this level should be seen as offering a lot of learning activities including observing live specimens even in their unique habitats. Eventually this will offer appropriate diverse cognitive load to the learner. The student teacher will find it pleasurable as the instructor presents with the friendliest technological support coupled with the right pedagogical content knowledge. Student teachers should progress from the point of view of individual organisms to recognizing patterns in ecosystems and developing understandings about the cellular dimensions of living systems. Living systems at all levels of organization demonstrate the complementary nature of structure and function. Important levels of organization for structure and function are from the low-level cell to tissue; then organ, system, and whole organism to ecosystem. Student teachers also should expand their investigations of living systems to include the study of cells. This period of student teachers lends itself very well to Human Biology. They can therefore develop the general idea of structure-function in the context of human organ systems working together. The knowledge in basic process of sexual reproduction in flowering plants and humans can be concretized.

Course Title	**General Biology**			
Course Code	**EBS 103**	**Level 100**	**Credit Value 3**	**Semester 1**
Pre-requisite	Integrated Science			
Course Delivery Modes	**Face to face** **X**	**Practical Activity** **X**	**Seminar** **X**	**E-learning** **X**
Course Description for significant learning	This course is designed to consolidate and also upgrade the content and skills that students have acquired from their lessons in Integrated Science at the SHS level. The course covers the following areas: cell structure (as seen in the light and compound microscopes), organization of cells into tissues, organs and systems, classification, naming of organisms, general characteristics of the five Kingdoms of living things. The course also covers structure and functions of the parts of flowering plants; differences between monocots and dicots, food and nutrition in plants and animals; dentition in mammals, digestive, reproductive, respiratory (external) excretory and circulatory systems in mammals related to health and diseases. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity.			

	NTS: pg. 14, 1a, 1c, 2b, 2f, 3a, 3e, 3h, 3k pp22-31	
Course learning outcomes	**On successful completion of the course student teachers will be able to:**	**Indicators**
	CLO 1. Describe the structure of a cell and its organization **NTECF, NTS: 2c, p14, 3d, p15**	1.1 Observation of prepared slides of cells under the microscope 1.2 Looking at student teacher's own preparation of cells
	CLO 2. Classify and name organisms **NTECF, NTS: 2c, 3j**	2.1Develop a chart of at least one Phylum or Class that describes the features used to sort out organisms in the group e.g. Class Insecta: three body parts 2.2 Write a reflective report on diversity in terms of colour of skin, sex, intelligence to embrace inclusivity in the classroom
	CLO 3. Describe the structure of a flowering plant and describe the functions of its parts **NTECF, NTS: 2c, 3j.**	3.1 Identify the time when most of trees on campus would have flowered 3.2 Drawing full flower and half-flower
	CLO 4. Outline food and nutrition in plants and animals **NTECF, NTS: 1b, 1f, 1g, 2c, 2e, 3a**	4.1 List the components of a balanced diet
	CLO 5. Describe the digestive, reproductive, reproductive, respiratory, excretory and circulatory systems in mammals **NTECF, NTS: 3f, 3g, 3j**	5.1 Produce concept maps to match components of the circulatory system to their functions 5.2 State how energy from diet is used in the human body 5.3 Prepare a seminar report on distinction between a meal and a balanced diet Show charts of tests for food
	CLO 6. Describe dentition in mammals **NTECF, NTS: 2f, 3a, c, d.**	6.1 Write down the dental formula of representative animals.
	CLO 7. Acquire knowledge of health and diseases in humans **NTECF, NTS 1b, 1f, 2c, 2e.**	7.1 Outline the causative agents symptoms and treatment of diseases student teachers ever suffered
	CLO 8. Apply the knowledge gained in the course to everyday life **NTS: 3k-p**	8.1Supply appropriate examples under every topic treated

Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes:**
	1	Classification and naming of organisms	Concept of classification Organization plan of classification Binomial system of nomenclature	Source information from Internet on attempts by philosophers like Aristotle for organization of the living world. Student teachers to make presentation The ranks/hierarchies to be developed like the organogram of their institution Brainstorm on earlier attempts until Carolus Linnaeus. Student teachers provide the scientific names of any five plants and five animals found on their campus
	2	General characteristics of the five Kingdoms of organisms	The five Kingdoms of Prokaryotae/Monera, Protoctisita/Protista, Fungi, Animalia and Plantae to be established	Students to observe an assembly of living things and draw some of the organisms. Field trip to be taken to a nearby Botanical Garden or Animal Holding Facility or beach depending on location for viewing to appreciate variety of organisms
	3	The cell	The cell as the living structural and functional unit The cell theory and classification of cells Cells in relation to tissues, organs and systems	Plant and animal cells to be observed under the microscope. Students prepare own temporal slides of epidermis of *Talinum triangulare, Rheo discolor* and cheek cells Recount the historical background of the development of the cell theory Differences among prokaryotic, akaryotic and eukaryotic cells to be understood in terms of aggregation of cells into tissues to organs and systems

	4	Structure and function of flowering plants	Vegetative parts of a flowering plant Reproductive parts of a flowering plant	Observation of live specimens collected by students themselves. Student teachers to be guided to list the various parts of the plants collected and seek out a classification into monocots and dicots. Students attempt to list the various parts of the flower on the writing board Students teachers pick up flowers on campus but collection should specifically include *Delonix regia* (flamboyant), Hibiscus and Pride of Barbados. Terminologies for fused parts (gamo) and free parts (poly) should be introduced. Flower dissection should be introduced to demonstrate inferior and superior ovaries
	5	Food and nutrition animals	Balanced diet Dentition Digestion	Feeding and its importance should be discussed and effects of famine in some parts of the world should be mentioned by student teachers. Classes of food and their roles in the growth and development of the body. Relate type of food to age. Brainstorm on unhealthy eating habits. Examine the skull of herbivore, omnivore and carnivore to note the special dental formula. Homodont, heterodont, milk and permanent teeth should all be defined. Write down the dental formula and relate all to dental care Students to observe alimentary canal in dissected mammal. Experiments on the action of ptyalin. Experiences on constipation and indigestion should be narrated and causes and prevention studied
	6	Nutrition in plants	Raw materials for	Experiments to verify conditions necessary for

			photosynthesis	photosynthesis should be carried out Groups to discuss differences between nutrition in plants and animals and make presentations
	7	Reproductive system in mammals	Reproductive systems of the male and female mammal	Dissection of small mammal should be carried out to display the reproductive organs and drawn. Method of dissection could learnt on U-TUBE
	8	Respiratory system in mammals	Respiratory system to take in and out gases Anaerobic and aerobic respiration Disorders of the respiratory system	Models to be used to demonstrate inspiration and expiration. Experiments to demonstrate that oxygen is needed for respiration with carbon dioxide given out as by product Disorders of the respiratory may learned by recalling student teachers experiences with asthma, common cold.
	9	Excretory system of mammals	Differences between excretion and egestion Structure and function of the excretory organs of the mammal Some kidney functions	Watch the formation of urine on the Internet. Dissection, observation and drawing of excretory system of small mammal. Need to drink enough water for kidney health. Internet search by students on dialysis.
	10	Circulatory system in mammals	Structure and functions of the components of the circulatory system The heart Blood Blood vessels	Dissection, observation and drawing of the circulatory system Students' presentation on blood groups for blood transfusion. Relate information about blood on the choosing of life partner
	11	Health and diseases	Causative organisms of diseases Consideration of symptoms	Observation and drawing of preserved specimens of roundworms, tapeworms and guinea worm. Mention of water-borne and water related diseases.

			and treatment of tuberculosis, malaria, common cold and typhoid	Identification on the campus and immediate environment potential conditions that can lead to contracting and devise ways of addressing the conditions. Assemble newspaper cuttings on news reports of disease outbreaks in your community
Course Assessment (Educative assessment: of, for and as learning)	**Component 1:** Formative assessment on the individual and group presentation Summary of Assessment Method: Individual and group presentations on cells, classification, nutrition and diseases (Core skills to be developed: Internet search, diversity of life, communicative skills and problem solving) Weighting: 20% Assesses learning outcomes: CLO 1-3			
	Component 2: Formative assessment (Quizzes and Lab Reports) Summary of Assessment Method: One quiz on physiology of the mammal (Core skills to be developed: Observation, creativity and critical thinking Weighting: 20% Assesses learning outcomes: ALL			
	Component 3: Summative assessment Summary of Assessment Method: End of semester examination on all units (Core skills to be developed: critical thinking, personal development Weighting: 60% Assesses Learning Outcomes: All			
Instructional Resources	Laptops, Projector, Internet Connectivity, Microscope and Video resource (YouTube)			
Required references	Ghana Education Service (2004). *Integrated Science I for UTDBE programme by distance: Course FDC 114.* Accra: Teacher Education Division Mader, S. S. (2001). *Biology*. New York. McGraw-Hill companies, Inc. Nyavor, C. B. & Seddoh, S. (2000). *Biology for senior Secondary Schools.* (2nd Ed.) London. Unimax Macmillan Roberts, M. B. V. (1982). *Biology: A functional approach.* (3rd Ed.) Hong Kong. Thomas Nelson Ltd			

INFORMATION LITERACY SKILLS

PEDAGOGIC KNOWLEDGE WITH INCLUSIVITY

CONTEXT

There is no doubt that information is the fulcrum around which issues of individual and community development revolve. The changing information landscape due to improvement in technologies have come in its wake benefits as well as threats. There is the abundance of information in all formats, contexts and media but this has not thoroughly addressed issues of information overload, technostress and information ethics. Thus, there is the need to fully equip teachers with the skills and abilities to understand information needs, retrieve and organise resources to address them in a manner which adheres to the basic tenets of ethics. This, will teach them to become independent lifelong learners to source for information both manually and electronically, use them to solve problems towards personal and national development. Due to the multiplier effect of the peculiar roles teachers on individuals and the nation, it is envisaged that this course will, over time, lead to an appreciation of information as an important resource for national development and a human resource capable of using this tool as such.

Course Title	**Information Literacy Skills**						
Course Code	**EBS 118**	**Course Level:**	**100**	**Credit Value**	**1**	**Semester**	**2**
Pre-requisite							
Course Delivery mode	**Face-to-face** **X**	**Practical activity** **X**	**Work-based Learning** **X**	**Seminars** **X**	**Independent study** **X**	**e-learning opportunities** **X**	**Practicum**
Course description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This course is designed to equip students with the skill of how to retrieve and evaluate information both manually and electronically. It also exposes them to the legal and ethical use of information. Students are also introduced to the various academic databases. The mode of delivery will include tutorials/practical sessions. **(NTECF p68. NTS 1a, 1b, 1d, 1f, 1g; p12; 3c, 3e, 3h, 3i, 3j, 3k, 3l, 3m, 3n, 3p; p14)**						

Course Learning Outcomes: Including indicators for each learning outcome	**Outcomes: On successful completion of the course, student teacher will be able to:**			**Indicators**
	CLO 1: Explain basic concepts in Information Literacy **(NTECF p68. NTS 1a, 1b, 1g; p12; 3c, 3e, 3i, 3l, p14)**			1.1 Explain the meaning of Information Literacy 1.2 Outline the various kinds of literacies which make up information literacy 1.3 Discuss the significance of information literacy in real-life situations
	CLO 2: Describe the various type of and categories of libraries and their functions **(NTECF p68. NTS 1b, p12; 3c, 3e, 3h, 3i, 3l, 3m, 3n; p14)**			2.1 Define the concept of a library and distinguish among the various categories of libraries based on their operations and collections 2.2 discuss the merits and demerits of the various categories of libraries 2.3 Describe the various types of libraries according to functions, users, collections and services.
	CLO 3: Explore print information resources and their uses **(NTECF p68. NTS 1b, p12; 3c, 3e, 3h, 3i, 3l, 3m, 3n; p14)**			3.1 Describe reference materials outlining their characteristics and giving some types, examples and their uses. 3.2 Define periodicals citing some types, uses and their time intervals. 3.3 Describe the manual information searching tools
	CLO 4: Manage and use online journals and other electronic resources **(NTECF p68. NTS 1b, p12; 3c, 3e, 3h, 3i, 3j, 3k, 3l, 3m, 3n, 3p; p14)**			4.1 Discuss networks, internet and some information resources on the internet. 4.2 Explain some uses and misuses of the internet 4.3 Describe the effective tools for accessing resources on the internet 4.4 Explain how to evaluate information from the internet
	CLO 5: Explain the legal and ethical use of information **(NTECF p68. NTS 1b, 1d, p12; 3c, 3e, 3h, 3i, 3k, 3l, 3m, 3n, 3p; p14)**			5.1 Describe how to cite information sources 5.2 Explain the concepts of plagiarism, copyright and fair use.
Course content	**Unit**	**Topics**	**Sub-topics (if any)**	**Teaching and learning activities to achieve**

				learning outcomes
	1	**LIBRARIES AND SOURCES OF INFORMATION**	1. Information Literacy 2. Categories of libraries	* Diagnostic test on the concept of information literacy *Discuss the meaning of Information Literacy * Enumerate, with examples, the various literacies which constitute Information Literacy * Identify the characteristics of an information literate person * Explain, with real life examples, the importance of information literacy * Demonstrate the advantages and disadvantages of Traditional, Digital and Hybrid Libraries
	2	**TYPES OF LIBRARIES**	1. Function of libraries 2. Services of librarians	* Discuss the core functions of the five (5) types of libraries * As a group, enumerate and explain the various services offered by the types of services
	3	**LIBRARY RESOURCES**	1. Print and non-print resources * Reference materials – Dictionaries, Encyclopaedia, Bibliographies, Biographies, Directories * Periodicals – Newspapers, Magazines, Journals, Indexes, Abstracts,	* Group to describe the different types of reference materials listing their uses and some specific examples * Identify some examples of periodicals indicating their time periods
	4.	**THE INTERNET AND DIGITAL INFORMATION**	1. Introduction to internet and internet connectivity 2. Use and misuse of the internet 3. Effective search strategies 4. Evaluation of online information resource	* Demonstration of how computer networks are created using some internet-enabled devices * Group presentation to demonstrate some uses and misuses of the internet * Class simulation to perform various search strategies online * Analyse some online resources to determine their worth

	5.	**ORGANISATION OF KNOWLEDGE**	1. Definition of information and knowledge (the information pyramid) 2. Tools for organising information 3. Forms of Library Catalogue 4. Classification Scheme: Library of Congress and Dewey Decimal Classification Schemes	* Class discussion of the information pyramid: data-information-knowledge-wisdom * Class demonstration using the physical form of the library catalogue as well as the Online Public Access Catalogue (OPAC) * Class discussion of the various classification schemes
	6	**ETHICAL AND LEGAL ISSUES IN USING INFORMATION**	1. Plagiarism 2. Copyright 3. APA Citation Style	* A debate on the reasons and effects of plagiarism * Group Critique on Ghana's Copyright Law * Hands-on practice of the APA Citation Style
	7	**PRACTICAL SESSION**	1. Internet Search Tools * Search Engines * Subject Directories/Gateways * Meta Search Engines * Academic Databases	* Hands-on practice on using the various search tools to access information resources in the computer labs * Discuss a step-by-step process of effective searching on the internet
Course assessment components: (Educative assessment of, for and as learning)	**Component 1:** Formative Assessment (Individual Assignment and Group Presentations) Summary of Assessment Method: Individual demonstration of characteristics of an information literate person, some information resources and the kind of information needs that could be used to address, how to locate reading list using the catalogue and other search tools and a Group Presentation on the role of some types of libraries in the life of a student. Core Skills to be developed: Information seeking skills, critical thinking, decision making skills, teamwork Weighting: 30% Assessed learning Outcomes: CLO 1, CLO 2, CLO 3			

	Component 2: Formative Assessment (Individual Assignment and Group Work) Summary Assessment method: Individual presentations on the concept of internet and internet connectivity, information resources found online, effective searching on the internet, citation of some information sources, group presentations on the uses and misuses of the internet, debate on plagiarism and copyright. Core skills to be developed: Critical thinking skills, Information seeking behaviour, decision making skills, team work, presentation skills
	Component 3: Summative Assessment (End of Semester Examination) Summary of Assessment methods: An End of Semester Examination that encapsulates Course Learning Outcomes 1 to 5, and make use of a combination of the formative assessment methods in components 1 and 2. Core skills to be exhibited: Critical thinking, problem solving, feedback. Weighting: 40% Assesses Learning Outcomes: CLO 1, 2, 3, 4 & 5
Instructional Materials	1. Laptops 2. Projector 3. Internet Connectivity 4. Library Catalogues
Required Text (Core)	Entsua-Mensah, C. (Ed.). (2015). *Information Literacy Skills: A course book* (Revised Edition). Cape Coast: University of Cape Coast.
Additional Reading List	Aina, L.O. (2004). *Library and Information Science text for Africa*. Ibadan: Third World Information Services Limited. Gates, J.K. (1962). *Guide to the use of books in libraries.* New York: McGraw-Hill Glister, J.K. (1997). *The web navigator.* New York: Wiley Computer Publishing. Olalikum, S.O., & Salisu, T.M. (1993). *Understanding the library: A handbook on library use.* Lagos: University of Lagos Press. Rowley, J.F., & Farrow, J. (2000). *Organizing knowledge: An introduction to managing access to information* (3rd ed.). Cambridge: Cambridge University Press. Sayers, W.C.B. (1963). *Manual of classification for librarians and bibliographers* (3rd.). London: Andre Deutsch. Smith, A.N., & Medley, D.B.M. (1987). *Information resources management*. Cincinnati: South-Western Publishing.

COMPUTER LITERACY

CONTEXT

The emergence of the information age has brought to the fore, the important role that information, knowledge and technology can play in facilitating socio-economic development. The effective use of information and knowledge is becoming the most critical factor for rapid economic growth and wealth creation, and for improving socio-economic well-being. ICT should be integrated within all the learning activities of the school across all subjects. Targets for students' use of ICT relate to the usage of various ICT tools, broader issues associated with assessing information using these tools, and other management skills. As ICT is an important element in most subjects, ICT-related skills are assessed through traditional school subjects. The use of ICT in education can play a crucial role in providing new and innovative forms of support to teachers, students, and the learning process more broadly. With globalization, the information revolution, and increasing demands for a highly skilled workforce, nations are increasingly prioritizing education. The potential and promise of ICT use in education is clear: when implemented correctly, software in the classroom, for example, can allow students to learn at their own pace and tablets can help children develop important digital skills and computer know-how that they'll need to succeed in our knowledge-based economy. The programme has been designed to incorporate Digital Competence which cover basic education. The programme's priority areas have been related to ICT infrastructure, competence development, research and development, digital teaching resources, curricula and working methods. The programme will achieve the following key objectives:

- Access to high quality ICT infrastructure and services;
- The use ICT as an integrated tool for innovation and quality development in education in Ghana.

Course Title	**Computer Literary**						
Course Code	**EBS 107**	**Course Level**	**100**	**Credit value**	**3**	**Semester**	**2**
Pre-requisite							
Course Delivery Modes	**Face-to-face X**	**Practical Activity X**	**Work-Based Learning**	**Seminars**	**Independent Study**	**e-learning opportunities X**	**Practicum**
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This introductory course further exposes students to the components of a computer and their function(s). It also introduces students to how data is represented on the computer and processed. The following areas will also be covered in the course: storage media use, data entry and capture, data file organization and access including file processing. Also covered in this course are security and privacy issues. The approaches that would be used in the delivery of this course would prepare trainees to be mindful of gender roles. (NTS 2b, 2c, 3e-3j, 3p; NTECF Pillar 1)						
Course Learning Outcomes: including INDICATORS for Each learning outcome	**Outcomes** On successful completion of this course, student teacher will be able to:			**Indicators** The following will be uses to measure the achievement of the corresponding learning outcomes:			
	1. Demonstrate knowledge and understanding of basic components of computers and its functions. **NTECF, NTS, 3i, & 3j**			1. Differentiate among laptops, tablets, desktops, and servers. 2. Describe the purpose and uses of smartphones, digital cameras, portable and digital media players, e-book readers, wearable devices, and game devices. 3. Describe the relationship between data and information. 4. Explain various input options (keyboards, pointing devices, voice and video input, and scanners), output options (printers, displays, and speakers), and storage options (hard disks, solid-state drives, USB flash drives, memory cards, optical discs, and cloud storage)			
	2. Demonstrate networking components and explain the importance of institutions having a			1. Discuss the purpose of components required for successful communications (sending device, communications device, transmission media, and receiving device) and identify various			

	computer network. **NTECF, NTS, 3i, & 3j**		sending and receiving devices. 2. Differentiate among LANs, MANs, WANs, and PANs. 3. Describe commonly used communications devices: broadband modems, wireless modems, wireless access points, routers, network cards, and hubs and switches	
	3. Demonstrate knowledge of Internet and web technologies. Demonstrate how to access online resources for academic work. **NTECF, NTS, 3i, & 3j**		1. Differentiate the web from the Internet, and describe the relationship among the web, webpages, websites, and web servers. 2. Explain the purpose of a browser, a search engine, and an online social network. 3. Know how to use search techniques (inclusion, exclusion, wildcards, phrase, Boolean search), evaluate the information found on Web pages (chat rooms, newsgroups, RSS, podcasting sites, Wikipedia, blogs), and cite electronic and printed references	
	4. Demonstrate understanding of vulnerabilities faced by computers, mobile devices and related technologies. NTS 2b, 2c, 3e-3j, 3p; NTECF Pillar 1 5. Show an understanding of tools and techniques used to safeguard computing resources. NTS 2b, 2c, 3e-3j, 3p; NTECF Pillar 1		1. Define the term, digital security risks. 2. Describe various types of Internet and network attacks (malware, botnets, denial of service attacks, back doors, and spoofing) and explain ways to safeguard against these attacks, including firewalls. 3. Discuss techniques to prevent unauthorized computer access and use, including access controls, user names, passwords, possessed objects, and biometric devices.	
Course Content	**Units**	**Topics**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	Unit 1	Introducing Today's Technologies: Computers, Devices, and the Web	1. Definition of computer. 2. Categories of computers. 3. Components of computers. 4. Advantages and disadvantages of computers. 5. Uses of computers in society	• Use of presentation to explain today's technology. • Class discussion on the components, advantages and disadvantages of computers. • Group Writing Activities on

			especially in education.	uses of computers in today's education. Encourage females to lead groups to deal gender stereotypes.
	Unit 2	Connecting and Communicating Online	1. Internet. 2. Connecting to Internet. 3. World Wide Web. 4. Type of websites. 5. Netiquette.	• Discuss the internet and its evolution • Use student's responses to list the types of websites • Discussion on Netiquette.
	Unit 3	Application Software	1. Application software. 2. Business software. 3. Graphic and media software. 4. Software for home, business and educational use.	• Group project on the various application software. Encourage females to lead groups to deal with gender stereotypes. • Students identify the various software they have been using.
	Unit 4	The Components of the System Unit	1. System Unit. 2. Processor. 3. Memory. Port and Connections	• Demonstrate by opening a system unit in class for students to identity the various parts. • Class discussion on the functions of the components of the system units. Encourage females to lead the discussion to deal gender stereotypes.
	Unit 5	Input devices		• Feedback/Presentation Activities on input devices
	Unit 6	Output devices		• Feedback/Presentation Activities on output devices
	Unit 7	Communications and Networks	1. Use of computer communication. 2. Network. 3. Network Communication standards.	• Give a lecture on network • Brainstorm to understand communication devices • Group project on the various transmission mediums.

			4. Communication Devices. 5. Transmission media.	Encourage females to lead groups to deal gender stereotypes. • Discuss the uses of computer network.
	Unit 8	Computer Security and Safety, Ethics, and Privacy	1. Computer security risk. 2. Internet and network attacks. 3. Unauthorized access and use. 4. Hardware theft and vandalism. 5. Ethics and society.	• Give a lecture on ethics and security. • Being mindful of gender roles, brainstorm to understand why computing resources are vulnerable to attacks. • Group project on the various ways to safeguard computing systems. Encourage females to lead groups to deal gender stereotypes.
Course Assessment Components: (Educative assessment of, for and as learning)	A combination of formative and summative assessment including group tasks, quizzes, individual and take home assignment and examination will be used. **Component 1: Formative assessment** (Weighting=40%): Quizzes, and individual assignments= 20%, Group assignments and seminar presentations= 20% **Core skills to be developed**: Interpersonal and presentation skills, intellectual skills, research and organisation and creative skills. Assessing learning outcomes: CLO 1-3 **Component 2: Summative assessment**: End of semester examination (Weighting-60%): Part A: Practical Examination =30%, Part B: Theoretical Examination=30% **Core skills to be developed**: Interpersonal and presentation skills, intellectual skills, research and organisation and creative skills. Assessing learning outcomes: CLO 1-5			
Instructional Resources	Lectures, MS-PowerPoint projections			

Required Text (core)	Vermaat, M., E., Sebok, S., L., and Freund, S., M. (2014). *Discovering Computers: Technology in a World of Computers, Mobile Devices, and the Internet*, Course Technology, Cengage Learning National. (2015). *Introduction to Computers and Information Technology*. Prentice Hall. Asante, A. (2012). *Essentials of Computers for Tertiary Students*. Cape Coast: University Press
Additional Reading List	Rajaraman, V. (2018). *Introduction to information Technology*. PHI Learning Pvt. Ltd.

CHILD AND ADOLESCENT DEVELOPMENT AND LEARNING

CONTEXT

The course will equip teachers with adequate knowledge and understanding in dealing with learners with varying characteristics and who come from diverse background. It is expected that the course will equip the student teacher with the theoretical knowledge underpinning learning and development as well as the cultural influences on them such as gender role practices. It is again expected that learning challenges of learners such as forgetting what they learn, difficulties in transfer of knowledge and strategies to improve learning will be addressed.

<table>
<tr><td>Course Title</td><td colspan="7">Child and Adolescent Development and Learning</td></tr>
<tr><td>Course Code</td><td>EBS 106</td><td colspan="2">Course Level:</td><td>100</td><td>Credit Value:</td><td>3</td><td>Semester</td><td>2</td></tr>
<tr><td>Pre-requisite</td><td colspan="8"></td></tr>
<tr><td>Course Delivery Modes</td><td>Face-to-fact [*]</td><td>Practical Activity</td><td>Work-Based Learning</td><td>Seminars [*]</td><td>Independent Study [*]</td><td colspan="2">e-learning opportunities [*]</td><td>Practicum</td></tr>
<tr><td>Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)</td><td colspan="8">The course provides a broad overview of child development from conception through childhood to adolescence. It will focus on the effects of nurturance practices on the child and how the characteristics of the child can be applied to enhance development and learning. The course will address Teachers Professional Knowledge and Professional Practice. The teaching approaches: interactive and collaborative group work, Student Teacher led seminars. (NTECF, NTS, 2b 2c,2e, 3a, 3c,3e,3h)</td></tr>
<tr><td rowspan="3">Course Learning Outcomes [8]: including INDICATORS for each learning outcome</td><td colspan="4">Outcomes
On successful completion of the course, student teachers will:</td><td colspan="4">Indicators</td></tr>
<tr><td colspan="4">1. Demonstrate knowledge and understanding in describing the development stages, tasks and characteristics of children and adolescents and the implication for teaching (NTECF, NTS 2c,2e, 3e)</td><td colspan="4">1.1 Explain the various stages of development. Identify children and adolescent characteristics and its implication for teaching.</td></tr>
<tr><td colspan="4">2. Demonstrate knowledge and understanding of</td><td colspan="4">2.1. State the main principles and threats to child</td></tr>
</table>

	the main principles, trends and threats to child development and ways of improving nurturance practices and values on issues such as gender. (**NTECF, NTS 2c,2e, 3e, 3h)**			development and how to improve nurturance.
	3. Demonstrate knowledge and understanding of the various processes of learning identified by learning theorists as well as the various strategies teachers can use to enhance pupil learning. (NTECF**, NTS 2c,2e, 3i,3c)**			3.1. Make notes on the definitions of learning from different theoretical perspectives. 3.2. State and explain the various learning principles in each of the learning theories. 3.3. Compare the various learning theories 3.4. List and discuss specific strategies to promote pupils' learning.
	4. Demonstrate knowledge and understanding of the memory system, forgetting and transfer of learning and its classroom implications **(NTECF, NTS 2b, 2c, 3a, 3e, 3l)**			4.1. Explain the stages of memory. 4.2. Make notes on improving memory, reasons to explain forgetting and learning implications. 4.3. Explain the concept 'transfer of learning', types of transfer and factors affecting transfer and learning implications.
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	The concepts and principles of development.	The concept, principles and stages of growth and development. Aspects of development – physical, social, moral, cognitive, language and their interrelationships. Genetic, maturational and environmental influences on development. Critical periods in development. Conception and pre – natal development. Effect of early experiences and child rearing practices on child and adolescent development	1.1 Tutor – led discussions on the principles and stages of growth and development. 1.1. Students to identify and describe the physical, social, moral and cognitive development. 1.2.Individual and Group power point presentations on Language development. 1.3.Tutor – led discussions on genetic and environmental influences on development. 1.4.Audio – visual presentation on the course of prenatal development. 1.5.Brainstorm on adverse effects of early experiences and child rearing.

	2.	Trends in child and adolescent development	Physical growth and changes (childhood. Pubescence and its consequence). Cognitive development: Jean Piaget; Stages, characteristics, achievements and implications. Psychosocial development: Erik Erikson; Language development: stages and influences, Moral development: L, Kohlberg; implications for teaching. Meaning and characteristics of learning Factors that influence pupil learning: The importance of pedagogy and the need to change stereotypes in pedagogic practices. Behavioural learning: Conditioning, practice and reinforcement Cognitive Learning: The discovery process Cognitive Learning: The reception process Co-operative learning The Memory system/process Factors that promote retention Theories of forgetting Transfer of learning	2.1. Individual and group power point presentations on Physical development from childhood to adolescence. 2.2. Tutor-led discussions on Piaget's cognitive development stages and classroom implications. 2.3. Tutor – led discussion on Erik Erikson's psychosocial development and classroom implications. 2.4 Group presentation and discussion on how

			Implications for teaching Minimizing difficulties in pupil learning	language develops and educational implications. 2.5 Tutor-led and student – led discussions on moral development and learning implications.
	3.	Child and adolescent learning Information processing		3.1 Tutor- led discussion on approaches to memory and stages of memory. 3.2 Individual and Group Power point presentations on preventing forgetting. 3.3 Tutor – led discussions on various theories of learning. 3.4 Panel discussion on types of transfer and learning implications. 3.5 Brainstorming/debate on minimizing difficulties in pupil learning. 3.6 Tutor – led discussion on teaching for transfer.
Course Assessment Components[9]: (Educative assessment of, for and as learning)	Component 1: FORMATIVE ASSESSMENT (QUIZZES) Summary on Assessment Method 1. Quiz on stages of development, child and adolescent characteristics and implications for learning 2. Quiz on principles and threats to child development and how to improve nurturance. Weighting: 10% Assesses Learning Outcomes: CLO 1; CLO 2. **CORE SKILLS:** Independent Thinking Skills, Critical Thinking Skills			
	Component 2: FORMATIVE ASSESSMENT (POWERPOINT PRESENTATIONS) Summary of Assessment Method 1. Group power point presentations on learning principles of the various learning theories, comparison of the learning theories and their educational implications. 2. Group power point presentation on strategies to improve learning of pupils. Weighting: 30%.			

	Assess Learning Outcomes: CLO 3. **CORE SKILLS:** Independent Thinking Skills, Critical Thinking Skills and Communication and Presentation Skills
	Component 3: SUMMATIVE ASSESSMENT. Summary of Assessment Method: End of semester examination on units I to 4. Weighting: 60% Assess Learning Outcomes: CLO 1 – CLO 4. **CORE SKILLS:** Independent Thinking Skills and Critical Thinking Skills.
Instructional Resources	Projector Laptop Audio visuals and animations from known educational psychology sites online
Required Text (core)	Berk, L.E. (2012*). Infants and children: Prenatal through middle childhood (7th ed).* Toronto: Allyn & Bacon. Cobb, N. J. (2001*). The child, infants, children, and adolescents.* London: Mayfield Publishing Company Dacey, J. S., Travers, J. S., & Fiore, L. (2008*). Human development: Across the lifespan (7th ed*). Boston: McGraw-Hill, Inc Santrock, J. W. (2011*). Educational psychology* (5th ed) New York: McGraw – Hill Companies, Inc. Santrock, J. W. (2005). *Adolescence*.10th New York: McGraw – Hill Companies, Inc.
Additional Reading List [10]	Lahey, B.B. (2004). *Psychology: An introduction* (8th ed) New York: McGraw – Hill Companies, Inc. Santrock, J. W. (2002). *A tropical approach to life span development*. New York: McGraw – Hill Companies, Inc Weiten, W. (2007). *Psychology: Themes and variations (*7th ed). UK: Thompson Wadsworth

PRINCIPLES AND PRACTICE OF EDUCATION

CONTEXT

The teacher is the pivot around which any effective educational system revolves and no educational system can be better than the quality of its teachers. To produce the quality of teacher required to function effectively in the classroom teacher trainees need to be exposed to the principles and practice of education. Specifically, they need to understand the concept education and children they teach, principles of teaching, school discipline and effective classroom management. These are the ingredients for effective teaching and learning. The teacher also needs to understand his role in the curriculum development and implementation processes to see to the effective implementation of the national curriculum.

Course Title	**Principles and Practice of Education**						
Course Code	**EBS 125**	**Course Level:**	**100**	**Credit Value:**	**2**	**Semester:**	**1**
Pre-requisite							
Course Delivery Modes	**Face -to – face: [√]**	**Practical Activity: [√]**	**Work-Based Learning: [√]**	**Seminars: [√]**	**Independent Study: [√]**	**e-learning opportunities: [√]**	**Practicum: [√]**
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This course introduces the student to the philosophical and sociological principles underlying current educational practices involving teaching and the curriculum. Discussions focus on the importance of identifying the objectives and purposes of educational delivery. The role of the teacher in the processes of education and curriculum development and implementation process will also be discussed. The course will also offer student teachers the opportunity to examine the nature and structure of the basic school curriculum. Interactive techniques (discussions, debates, simulations) and assessment procedures (presentations, case studies, projects, report writing) will be employed in the learning process. They will also develop critical thinking and commitment to teaching and to become reflective practitioners in the classroom to ensure their self-professional development (**NTECF p. 68, NTS 1b, 3k, 3p, p. 18**).						

Course Learning Outcomes [8]: including INDICATORS for each learning outcome	**On successful completion of the course, student teachers will be able to:**	**Indicators**
	CLO 1. Demonstrate knowledge and understanding of the philosophy that has influenced the aims and functions of education in Ghana and the development of personal teaching philosophy.	1.1 Cite examples of the challenges facing Ghana as a developing country and the kind of aims that should be formulated in order to address such challenges. 1.2 Mention some social, cultural, economic and political functions of education.
	CLO 2. Exhibit sound knowledge and understanding of the agencies involved in educational delivery and them contributions to the various aspects of child education and develop passion and commitment for teaching, continuous professional development and seeing themselves as agents of change in the school and community (NTS1b, 1g p. 16).	2.1 Mention the various agencies responsible for the education of the child. 2.2 State the roles of each of the agencies in the socialization/education of the child. 2.3 Explain the need for collaboration among the various agencies of education for effective development of the child.
	CLO 3. Demonstrate clear understanding of liberal and vocational education and help address the misconceptions and prejudices associated with vocational education (NTECF p. 4, 13; NTS 3f).	3.1 Differentiate between liberal and vocational Education. 3.2 State some ways by which liberal and vocational education can promote the development of the individual. 3.3 Explain how the curriculum should be structured to cater for liberal and vocational education.
	CLO 4. Exhibit sound knowledge and understanding of the curriculum, its development and implementation, its relevance in national development and demonstrate passion and commitment for implementing the curriculum for national development (NTS1b, p. 16).	4.1 Mention the various stages or processes involved in curriculum design. 4.2 Demonstrate how the types of curriculum designed can influence national development.

Course Content	Units	Topics:	Sub-topics (if any):	Teaching and learning activities to achieve learning outcomes
	1	AIMS AND FUNCTIONS OF EDUCATION	The meaning and Aims of Education The functions of Education: Socio-cultural functions of education The economic functions of education The political functions of education The selection functions of education The Agencies of Education: The Home, The Mass media, Religious Organizations, Clubs and societies, The School Non-Governmental Organisations Child-centred education	Teacher led discussion on the etymology of the concept education and the Ghana's philosophy of education; Individual and group presentations; Using power point and reflective notes on Ghana's philosophy of education. Student teacher reflective notes on what qualities they need exhibit to be effective agents of socialization.
	2	THE CURRICULUM PLANNING PROCESS	The meaning of curriculum and need for curriculum planning Situational Analysis Establishing curriculum objectives Establishing curriculum content Establishing learning activities Evaluating the curriculum	Teacher led discussion on the curriculum development process; Using simulation; Using power point presentation and group presentations.
	3	APPROACHES TO CURRICULUM	The Subject Approach The Activity Approach The Broad field Approach	Student-led discussion on and demerits of the various approaches to curriculum design; Group presentation on the approaches to curriculum design;

		DESIGN	The Core Approach The Liberal Studies Approach The Vocational Curriculum	Using power point presentation; Writing reflective notes
	4	THE CURRICULUM AND NATIONAL DEVELOPMENT	Challenges to curriculum implementation The curriculum and economic development The curriculum and political development The curriculum and social development Curriculum changes and innovations	Teacher-led discussion on the challenges of curriculum implementation in Ghana as well as the influence of curriculum on the country's economic and political development; Individual and group presentations; Using power points; and writing reflective notes
Course Assessment Components[9] : (Educative assessment of, for and as learning)	**Component 1:** Formative Assessment (Individual and group Presentation) Summary of Assessment Method: Group presentations on the meaning of education and the basis for developing Ghana's philosophy of education. (Core skills to be developed: reflective thinking, collaboration and communicative skills, personal development). **Weighting:** 30% **Assesses Learning Outcomes:** CLO 1 & 2			
	Component 2: Formative Assessment (Quizzes) Summary of Assessment Method: Quiz on NTS; Skills the teachers need as agents of socialization, the meaning and forms of education; the curriculum development process and the need for the teacher to be involved in the development process and implementation. (Core skills to be developed: digital literacy, reflective thinking, collaboration and communicative skills, personal development). **Weighting:** 30% **Assesses Learning Outcomes:** CLO 2 & 4			

	Component 3: Summative Assessment (End of Semester Project) Summary of Assessment Method: Group semester projects to develop innovative curriculum for Ghanaian basic schools; reflective notes on curriculum implementation. (Core skills to be developed: digital literacy, reflective thinking, collaboration and communicative skills, personal development). **Weighting:** 40% **Assesses Learning Outcomes:** CLO 3 & 4
Instructional Resources	1. Projectors and computers 2. Audio-visuals 3. Resource persons
Required Text (core)	CCE, UCC (2015). *Philosophical and social foundations of education module I*. Cape Coast: University of Cape Coast Press. Olivia, F. P. (2005). *Developing the curriculum* (5rd ed.). London: Harper Collins.
Additional Reading List [10]	Antwi, M. K. (1995). *Education, society and development in Ghana*. Accra: Unimax Pub Ltd. Farrant J. S. (2006). *Principles and practice of education*. London: Longman Group Ltd. Nacino-Brown, R. Oke, F., & Brown, P. (1985). *Curriculum and instruction. An introduction.* New Delhi: H. R. Publishing House.

SUPPORTED TEACHING IN SCHOOLS

CONTEXT

In the training of professionals of all categories, apart from their skills and content knowledge development, there is always the need to provide opportunities to guide trainees to be familiar with field, which they will eventually practice, learn from practice (i.e., from practitioners in the field) and also apply their knowledge to improve their practice. In the case of teacher trainees, such opportunities can be provided when trainees are placed in schools and supported by teachers in those schools. In this course, instead of rushing trainees to take teaching roles in the schools where they will be placed right from the beginning, opportunities are provided to help them make meaningful observations of the school, classroom, interactions among pupils, interactions between teachers and their students, study ways in which teachers assess pupils' understanding and interview various categories of members of the school, where necessary.

Course Title	**Field Experience in Schools I**						
Course Code: EBS 191	**Course Level: 100**			**Credit Value: 3**		**Semester: 1**	
Pre-requisite							
Course Delivery	**Face-to-Face X**	**Practical Activity X**	**Work-based Learning X**	**Seminars X**	**Independent Study X**	**e-learning Opportunities X**	**Practicum X**
Course Description for significant learning (indicate NTS, NTECF, BSCGLE to be assessed)	This course is the first of a series of authentic classroom-based aspect of the Bachelor of Education (Primary Education) programme, which provides trainees with opportunities to observe actual classroom interactions and work with teachers (mentors) and their peers. Trainees have in the past experienced the classroom as students. This time they step in not as students to be taught directly but with the aim of beginning to gain a sense of what the classroom environment looks like. To do this effectively, opportunities will be provided for trainees to use a simple lesson observation instrument and how to interview pupils and teachers respectively about their experiences in the classroom to promote reflection. They will also be guided to start using portfolios in which they document their field experience activities. Trainees are expected to visit the school one day a week for 6 weeks in the semester. This first Field Experience arrangement is to be used by Primary Education teacher trainees at the Upper Primary Level. In the second semester, this is repeated by such trainees but this time in the Lower Primary level **NTECF Pillar 4; NTS 1 a, d, e, f &g..**						
Course Learning Outcomes: including	**OUTCOMES** By the end of semester, trainees will be able to:			INDICATORS			
	CLO 1: Demonstrate the ability to develop and use a field experience activity log **NTS 1 a, d, e, f &g**			1.1: Submit a detailed schedule of their school visits. : Produce, as part of the portfolio, a well-organized field			

INDICATORS for each learning outcome		experience log that shows activities undertaken in the school and the support received from their mentors.
	CLO 2: Exhibit the ability to interact with students and teachers, including administrators of the school they are visiting **NTS 1 a, d, e, f &g**	2.1: Produce a handwritten journal that shows a record of dates, times and descriptions of their experiences with the different categories of people. 2.2: Describe aspects of the school culture such as the language of instruction in the classes visited 2.3: Interview students, teachers and head of school about their attitudes towards certain school subjects and their experiences in the school.
	CLO 3: Use a simple observation handout to observe lessons **NTS 1 a, d, e, f &g**	3.1: Submit a record of lessons observed using a simple observation guide. 3.2: Describe the physical environment of the class(es) visited such as the quality of posters, pictures or bulletin boards and what they depict. 3.3: Submit a summary description of the lessons observed highlighting how the teacher communicated with the class, strategies the teacher used to assess student understanding and resources, books, or materials used by the teacher. 3.3: Detail any special arrangements made by the teacher to support students with physical or learning challenges.
	CLO 4: Explain the key demographics of the school context **NTS 1 a, d, e, f &g**	4.1: Submit a brief analysis of the population of the school by gender 4.2: Describe the diverse ethnic background of students in the school, as well as the dominant occupation of their parents

	Units	**Topics**	**Subtopics**	**Teaching & Learning Activities**
Course Content	1	College level Orientation	Orientation by College tutors on the purpose of and activities to be undertaken during this semester's STS	Use of PowerPoint and other visual representations to give students orientations on the activities to be undertaken during their school visits

	2	Development of instruments to be used for this semester's STS	Activity logs, journals, and lesson observation forms	Lead students to discuss and develop various instruments to be used during their school visits and how these can fit into their overall portfolios
	3	College level practice on how to conduct interviews and develop portfolios	Guided learning of how to develop portfolios of field experiences and interview different categories of members of the school	3.1: Use videos, multimedia systems of actual lessons and typical school activities and sessions to get students to practice developing sample activity logs, description of experiences, observation of lessons etc. and putting them together into miniature portfolios 3.2: Provide opportunities to support trainees on how to interview pupils and teachers respectively about their experiences in the classroom
	4	School level orientation	Orientation by Head of School and Mentors on school culture and other relevant policies	Mentors and school head interact with trainees to familiarize the latter with the Lower Primary environment, as well as discuss activities to be undertaken by trainees as prescribed in the Supporting Teaching Guide
	5	Interaction with key members of the school	Interaction with head of school, teachers, students and examine various school documents	5.1: Interact with the head of school, teachers, students and observe aspects of the school culture such as the language of interaction outside of the classroom and for instruction in the classes visited 5.2: Interview students, teachers and head of school about their attitudes towards certain school subjects and their experiences in the school 5.3: Examine school documents and analyze the population of the school by gender 5.4: Examine school documents and capture the diverse ethnic background of students in

				the school, as well as the dominant occupation of their parents
	6	Classroom observations	Lesson observation using a simple observation guide and focusing on special need students.	6.1 Observe the physical environment of the class(es) visited and record the quality of posters, pictures or bulletin boards and what they depict. 6.2: Observe lessons taught by the class teacher taking note of strategies/pedagogies used in teaching 6.3: Observe the nature of student-teacher and student-student interactions 6.4: Observe strategies the teacher uses to assess student understanding and resources, books, or materials used by the teacher. 6.5: Observe students with special needs 6.6: Observe and record any special arrangements made by the teacher to support students with physical or learning challenges. 6.7: Observe both girls and boys responses to teaching and learning in classroom enquiries 6.8: Audit, review and evaluate the learning resources in the classroom in terms of gender in textbooks, for example.
	7	Finalization of trainees' portfolios		One week layover for trainees to finalize their portfolios for submission
	8	Trainee presentations		Provide opportunities for trainees to make presentations of their experiences. This could take the form of poster presentations
Course Assessment	**Component 1: Portfolio Assessment (NTS 1 a, e, & f)** Trainees will be expected to develop portfolios detailing their interactions with students, their mentors and other			

Components: (Educative assessment of, for and as learning)	teachers, the head of school, trainees personal experiences, descriptions of lessons they observed, and any activities undertaken in the school (see CLO 1 to 4). These portfolios will be assessed using rubrics developed to assess the quality of presentation and detail provided. The portfolio assessment will constitute 60% of trainee's score **Component 2: Evaluation by mentors (NTS 1 d, e, f, & g)** Trainees will be assigned who will work with them and guide them through out the period. These mentors will assess their mentees punctuality, regularity and attitudes to work, professionalism (including how they behave towards students with physical or learning challenges and interact with teachers and students) and willingness to support extra curricular activities of the school. The mentor's evaluation will constitute 40% of trainee's score
Instructional Resources	Projectors, Laptop Computers, Video Recordings and other Multimedia Resources, Files, Field Notebooks
Required Text (Core)	Manion L, Keith, R. B., Morrison, K., & Cohen, L. (2003). A guide to teaching practice. Available at http://www books.google.com/books . Perry R 2004. Teaching practice for early childhood. A guide for students. Available at http://www Routledge.com catalogues./0418114838.pdf.
Additional Reading List	Kiggundu, E., & Nayimuli, S. 2009 Teaching practice: a make or break phase for student teachers *South African Journal of Education, (29),* 345-358. Menter I 1989. Teaching Stasis: Racism, sexism and school experience in initial teacher education. *British Journal of Sociology of Education,* 10:459-473.

GENERAL AGRICULTURE 1

Agriculture has several components, each of which offers several employment and entrepreneurial opportunities for the youth and adults. Rather than viewing agriculture as an ordinary subject, it is important for the teacher to develop an understanding of agriculture from varied perspectives in order to perceive the opportunities as well as constraints that may promote or restrain people from different gender, ages or backgrounds to engage in any of the agricultural enterprises. A teacher who is better placed to understand agriculture can easily adopt creative and varied means to win the interest of young people into agriculture.

<table>
<tr><td>Course Title</td><td colspan="7">General Agriculture 1</td></tr>
<tr><td>Course Code</td><td></td><td>EBS 113</td><td>Course level:</td><td>Credit Value:</td><td>3</td><td>Semester</td><td></td></tr>
<tr><td>Prerequisite</td><td colspan="7"></td></tr>
<tr><td>Course Delivery Modes</td><td>Face-to Face x</td><td>Practical Activity x</td><td>Independent Study x</td><td>Seminar</td><td>Work-Based Learning x</td><td>E-Learning x</td><td>Practicum</td></tr>
<tr><td>Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)</td><td colspan="7">The course is designed to provide students with basic knowledge on the scope of agriculture. It will help students to acquire knowledge on vocations in agriculture, agencies and institutions involved in agricultural development and the role agriculture plays in the socio-economic development of Ghana. Furthermore, basic information on factors to consider in selecting crops and/or animals to grow and sites for crop and/or animal production, will be discussed. Important national policies on agriculture and agricultural education as well as national programmes and events and cross-cutting issues in agriculture will be discussed.
The course will be facilitated through lectures, video presentations and class discussions and case studies.
(NTS 1b, 1f,1g, 2a,2b, 3d, e, f, NTECF pp. 20-22, 41-43)</td></tr>
<tr><td></td><td colspan="4">Outcomes
Upon successful completion of this course, the student will be able to:</td><td colspan="3">Indicators</td></tr>
<tr><td rowspan="2">Course Learning Outcomes: including INDICATORS for each Learning Outcome</td><td colspan="4">1. exhibit knowledge and understanding of how agriculture contributes to national development
NTS 1b,2a, b, NTECF pp. 20-22</td><td colspan="3">1.1 enumerate the contributions of agriculture to national development</td></tr>
<tr><td colspan="4">2. Show knowledge on vocations in agriculture, and agencies/institutions involved in agricultural development and their gender variations NTS 1b,2a,2b,3e NTECF pp. 41-43`</td><td colspan="3">2.1 list the vocations in agriculture and gender variations in these vocations
2.2 compile a list of agencies/institutions involved in agricultural development</td></tr>
</table>

	3. Show understanding and appreciation of the roles played by government and various institutions in enhancing agriculture. ***NTS 1b, 1c NTECF pp. 20-22***	3.1 analyse the roles of government and various institutions in enhancing agriculture. 3.2 produce photographs of some government interventions to promote agriculture
	4. Demonstrate knowledge and understanding of the factors to consider in selecting crops and/or animals to grow and in selecting sites for crop and/or animal production NTS *NTECF pp20-22, 28-29*	4.1 Discuss the factors that influence the selection of crops and/or animals to produce and the selection of sites for crop and/or animals' production
	5. Show an understanding of basic laws and policies that govern agriculture and agricultural education in Ghana. *NTS 1b,2a,b, NTECF pp. 20-22*	5.1 Discuss the basic laws and policies that govern agriculture and agricultural education in Ghana
	6. Show knowledge and appreciation of national agricultural programmes (NTS 1a-c)	6.1 List and discuss the various national agricultural programmes

Course content	**Units**	**Topics**	**Sub-topics (if any)**	**Teaching and learning activities to achieve learning outcomes**
	1	Contributions of agriculture to national development		Use lectures, video presentations and class discussions to enable students explain and appreciate the important contributions made by agriculture to national development
	2	Vocations in agriculture 1. Agencies/institutions involved in agricultural development		Students conduct desk study to determine agricultural occupations in Ghana and the agencies/institutions involved in agricultural development and how they vary in the inclusion of different gender
	3	Factors to consider in selecting crops and/or animals to grow and in selecting sites		A lecture will be used to introduce the factors that should be considered when choosing a crop or animal to produce, followed by group discussions and presentation of key points from the discussions to the class. Class discussion will be used to identify the factors that should be considered in selecting sites for crop and/or animals production

	4	Basic laws and policies that govern agriculture and agricultural education in Ghana.		Seminars. Lectures and case studies are used to enable students to explain and appreciate the basic laws and policies that Regulate agricultural production and education in in Ghana.
Course Assessment (Educative assessment of, for, and as learning)	**Formative:** Class test to assess knowledge and understanding of the contributions of agriculture and employment opportunities offered by agriculture to the state, and institutions involved in agricultural development Weighting: 20% Assessment of Group Reports from group discussions for quality and content. Each student's contribution to group discussions will be assessed through observation and peer assessment. Weighting: 20% **Summative** End of Semester Examination Weighting: 60%			
Instructional Resources	Computer (Lap-top) VCR Video projector			
Required Text (core)	Abbot, J. C., & Makeham, J. P. (1979). *Agricultural economics and marketing in the tropics***.** London: Longman Group Ltd. Brady, N. C. (1990). *The nature and properties of soils* (10th ed.). London: Macmillan Publishing Company. Garcia, S. M. (2009). *A fisher manager's guide book* (2nd ed). Rome: FAO of UN. Hudson, N. (1995). *Soil conservation* (3rd ed.). London: B. T. Batsford Limited Johnson, D. T. (1990). *The business of farming. A guide to farm business management in the tropics***.** London: Macmillan Publishers Ltd. Ministry of Education (1994). *Senior secondary school agriculture and environmental studies***.** Accra: Evans Brother Ltd. Perry, A., & Thompson, R. (1987). *Applied climatology: Principles and practice*. New York: Rouledge Publishers. Rath, R. K. (2011). *Freshwater aquaculture* (3rd ed.). New Delhi: Scientific Publishers Singh, S. S. (1988). *Principles and practices of agronomy.* New Delhi: Kalyani Publishers Sprenge, R.A (2012). *The food safety handbook (level 2)* London: Highfield. Youdeowei, A. E. F. C., & Onazi, C (1986). *Introduction to tropical agriculture* London: Longman Group Ltd.			

PHILOSOPHICAL AND PSYCHOLOGICAL FOUNDATIONS OF CURRICULUM

CONTEXT

By nature, the African has been described as being notoriously religious (Mbiti, 1969), and incurably religious (Parrinder, 1954). Religion permeates all aspects of human life from the time of one's birth to the time of his or her death. Besides, from traditional African religious perspective, the human personality is made up of three components, namely: the spirit, the body and the soul. This religious philosophy presents every human person as a spiritual and a social being whose spiritual and social needs should be met. To address these needs, Religious and Moral Education has been introduced as a subject and incorporated into the Ghanaian basic school curriculum. Children receive religious and moral training from home before they are enrolled in the school. In the course of their training, they are faced with a lot of moral challenges, like sexual immorality, drug or substance abuse, disrespect for authority, violence, pornography and many others. The school is therefore expected to reinforce the kind of religious and moral training that pupils acquire from home. This will help in training young people to grow up to become responsible adults in future. In the school, teachers are required to have good content knowledge and pedagogical skills to enable them to use RME to prepare learners for life. Regrettably, there has been a misconception that anybody at all, especially religious practitioners who do not have professional training can teach the subject. To erase this misconception, there has been the need for the development of a curriculum that will be used to adequately prepare student-teachers by equipping them with content knowledge and pedagogical skills required for their instructional practice.

Course Title	**Philosophical and Psychological Foundations of Curriculum**						
Course Code	EBS 123	**Course Level:**	100	**Credit Value:**	3	**Semester**	1
Pre-requisite	Student-teachers must have exposure to the three major religions in Ghana, namely Christianity, Islam and African Traditional Religion either through study or practice.						
Course Delivery Modes	**Face -to - face**	**Practical Activity [x]**	**Work-Based Learning**	**Group Discussion [x]**	**Independent Study [x]**	**e-learning opportunities**	**Practicum**
Course Description	This course examines the nature and scope of Religious and Moral Education. It explores the aims of teaching Religious and Moral Education and identifies the main sources of morality. It also examines the philosophical						

for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	positions that people take towards the study of RME. These positions, which may either promote neutrality or indoctrination, include Exclusivism, Inclusivism, Relativism and Pluralism. It also explores current theories of Religious and Moral Education and their application to teaching and learning process. The psychological theories of Richard Ackland, Ronald Goldman, Sigmund Freud, Jean Piaget and Barrhus Skinner would be examined. Student-teachers will be assessed through Quizzes, Assignments, projects, reports based on field studies, oral presentations and end of semester examination (NTS 2b,c,e; NTECF Pillar 1), (NTS 1a,f,g; NTECF Pillar 4); (NTS 3e,f,g,i,k,p; NTECF Pillar 3)	
Course Learning Outcomes: including INDICATORS for each learning outcome	**Outcomes** 1. Demonstrate knowledge and understanding of key concepts involved in Religious and Moral Education and apply them to their professional practice. (NTS 1a, e, 2c, NTECF page 20) 2. Demonstrate knowledge and understanding of different philosophical orientations of RME and apply knowledge of the philosophy of inclusivism to the teaching of RME (NTS 2c, e, f page13) 3. Demonstrate knowledge and understanding of the pluralistic nature of Ghanaian society by using the teaching of RME to promote religious tolerance. (NTS 2f; NTECF pillar 1, page 20) 4. Demonstrate an understanding of the use of objectivity in teaching RME so as to avoid indoctrination. (NTS	**Indicators** 1.1 Explain the concepts "Religion", "Morality" and "Education". 1.2 Explain the concepts "Religious Education", "Moral Education" and "Religious and Moral Education", and examine their pedagogic implications. 2.1 Demonstrate through teaching how RME can cater for the needs of different categories of learners, irrespective of their religious or social background. 3.1 Promote religious tolerance by encouraging group work, and also drawing examples from the three religious traditions during the instructional period. 4.1 Promote a democratic culture in the classroom by encouraging respect of divergent views from learners.

	1e, f; NTS 3c, e, g; NTECF pillar 3, page 27) 5. Demonstrate understanding of psychological theories that influence the teaching of RME. (NTS 2c, e; NTECF pillar 3, page 27) 6. develop the essential skills required for integrating ICT into the teaching of RME. (NTS 3j; NTECF pillar 3)			5.1 Demonstrate through teaching how psychologists like Sigmund Freud, Jean Piaget, Barrhus F, Skinner, Ronald Goldman and Richard Acland have influenced the teaching of RME. 6.1 Demonstrate how to use Power Point presentation to teach various topics in RME.
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	**Meaning and Scope of Religious and Moral Education**	• The nature of *Religion, Morality* and *Education.* • The issues of *Indoctrination, Conditioning, Training* and *Brainwashing*. • (iii) Relationship between "*Religious Education*" and "*Moral Education*". • (iv) The Scope of Religious and Moral Education.	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in teaching RME. • **Assignment**: Tutor gives assignment to students to find the meaning of the key concepts involved in teaching RME. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform.
	2	**Aims and Sources of Study of Religious and Moral Education**	• (i) Aims of Teaching Religious and Moral Education - Educational Aims - Non-educational Aims • (ii) Sources of Morality - Religious Sources ➢ Christianity ➢ Islam ➢ African traditional Religion - Non-Religious Sources	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in teaching RME. • **Assignment**: Tutor gives assignment to students to find the meaning of the key concepts involved in teaching RME. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. • **Use of ICT:** Tutor uses Power Point

			➢ Home ➢ School ➢ Media ➢ Constitution, Bye Laws ➢ Conscience	presentation to explain key concepts. • **Brainstorming:** Tutor uses Brainstorming method to get student-teachers identify the sources of morality.
	3	**Philosophical Foundations of Religious Education**	**Philosophical Foundations of Religious Education** • Exclusivism • Inclusivism • Relativism • Pluralism	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in teaching RME. • **Assignment**: Tutor gives assignment to students to find the meaning of the key concepts involved in teaching RME. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform.
	4	**Religious Development Theories**	• (i) Richard Ackland (***We Teach Them Wrong)*** • (ii) Ronald Goldman (***Religious Thinking From Childhood to Adolescence*)**	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in teaching RME. • **Assignment**: Tutor gives assignment to students to find the contributions of the researchers to the teaching of RME. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform.
	5	**Moral Development Theories**	• Sigmund Freud (***Psychoanalytic Theory*)** • (ii) Jean Piaget (***Moral Development Theory***) • (iii) Barrhus Frederick Skinner (***Behavioural Theory***)	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in teaching RME. • **Assignment**: Tutor gives assignment to students to find the meaning of the key concepts involved in teaching RME. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform.

	6	**Factors Affecting Moral Development of an Individual**	• (i) The Home • (ii) The School • (iii) The Media	• **Discussion:** Tutor uses the Discussion Method to get student-teachers identify the factors that affect moral development. • **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in teaching RME. • **Assignment**: Tutor gives assignment to students to find the meaning of the key concepts involved in teaching RME. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform.
Course Assessment Components: (Educative assessment of, for and as learning)	**Component 1:** Formative Assessment (Individual and Group Presentation) Summary of Assessment Method: Individual and Group Presentations to assess student-teachers' Subject and Curriculum Knowledge (SCK) Weighting: 30% Assesses Learning Outcomes: CLO 1- 6 **Component 2:** Formative Assessment (Quizzes and Assignments) Summary of Assessment Method: Quizzes and Assignments to assess student-teachers' Pedagogical Knowledge (PK) Weighting: 30% Assesses Learning Outcomes: CLO 1-6 **Component 3:** Summative Assessment (End of Semester Examination) Summary of Assessment Method: End of Semester Examination is conducted to assess student-teachers' learning outcomes in the development of critical thinking and creativity skills. Assessment will be based on student-teachers' Subject and Curriculum Knowledge (SCK), Pedagogical Knowledge (PK) and Professional Practice (PP). Weighting: 40% Assesses Learning Outcomes: CLO 1- 6			
Instructional Resources	• RME Textbooks • RME Syllabus • Journal Articles			

	• Religious Sites • Resource Persons • Use of Projector • Use of audio, visual and audio-visual aids
Required Text (core)	Asare-Danso, S. (2012*).* Religious Education in a democratic state: The Ghanaian experience. In P. Gotke & J. Nissen (Eds.). *Religious education between Formation, Knowledge and Control,* (pp. 59-65). Aarhus: Aarhus University, Denmark. Asare-Danso, S. (2018). Moral Education and the curriculum: The Ghanaian experience. *International Journal of Scientific Research and Management. 6*(1), 34-42. Asare-Danso, S., Annobil, C. N., Owusu, A. & Agyemang, M. (2014*). Religious and Moral Education for Colleges of Education*. Kumasi: Jerusalem Press. Awuah, G. & Owusu, A. (2000). *Religious and Moral Education for higher level students*. Kumasi: Jerusalem Printing Press. Meeker, K. (2003). Exclusivism, pluralism and anarchy, in *God Matters: Reading in the Philosophy of Religion*. R. Martin and C. Bernard, (eds.). New York: Longman. (pp. 524-534). Owusu, M. & Asare-Danso, S. (2018). Promoting Moral Education through co-curricular activities: Does school type count? *International Journal of Education and Social Science*, 5(1), 38-46. www.ijessnet.com
Additional Reading List	Agbavor, A.K. W. (2002). *Religious and Moral Education for schools and colleges*. Accra: Lestek Limited. Basinger, D. (2002). *Religious diversity: A philosophical assessment*. Burlington, VT: Ashgate Publishing Company. Yandell, K. (1999). *Philosophy of Religion: A contemporary introduction*. New York: Routledge.

FOUNDATIONS OF PHYSICAL EDUCATION

CONTEXT

Physical education helps students to develop the skills, knowledge, and competencies to live healthy and physically active lives at school and for the rest of their life. They learn 'in, through, and about' movement, gaining an understanding that movement is integral to human expression and can contribute to people's pleasure and enhance their lives. This course therefore seeks to empower trainees to participate in physical activity and understand how this influence their own well-being and that of their prospective students. By demonstrating the benefits of an active life style, they encourage others to participate in sport, dance, exercise, recreation, and adventure pursuits. Physical education engages and energises students. It provides authentic contexts in which to learn. In this course students are challenged to develop their physical, professional and interpersonal skills. This course will enable students to experience movement and understand the role that it plays in their lives and that of their prospective students. Students can contribute to the development of physical education programmes and choose their own level of participation. The resulting learning environment challenges their thinking and helps to promote an interest in lifelong leisure and recreational pursuits.

Course Title	**Foundations of Physical Education**						
Course Code	**EBS 110**	**Course Level:**	**100**	**Credit Value:**	**2**	**Semester**	**1**
Pre-requisite	**Student-Teachers have knowledge in** some basic Physical Education in the senior high school level.						
Course Delivery Modes	**Face -to -face** (√)	**Practical Activity** (√)	**Work-Based Learning** [3]	**Seminars** (√)	**Independent Study** (√)	**e-learning opportunities** (√)	**Practicum** (√)
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This course is designed to expose teacher trainees to the foundations of physical education which include the aims and objectives of physical education, the historical, social and humanistic bases of organized physical activity. Trainees will also be introduced to the concept of space awareness, effort and relationships to enable them gain the required knowledge for teaching these movement concepts to children. **(NTECF pg. 25, bullets 2,3,5,6,10, 11, and other requirements. NTS1a, 2c, e and f,3c, e, h, i, k, l)**						
Course Learning Outcomes [8]**: including**	**Outcomes By the end of the course, the teacher trainee will be able:**				**Indicators**		

INDICATORS for each learning outcome	CLO 1. demonstrate an understanding of the meaning and aims of Physical Education, **(NTS 1b, 1d 3 a,c, h)**			1.1 PE as part or a phase of education 1.2 PE contributes to the total development of the individual 1.3 Achievements of the subjects are through movement experiences, physical activities, or through the use of the large muscles of the body.
	CLO 2. differentiate between Physical Education in Athens and Sparta, **(NTS 1b, 1d 3 a,c, h)**			2.1 Aim of Education 2.2 PE programme 2.3 Way of life ; children, women and men.
	CLO 3. trace the Modern Olympic Games to the Ancient Olympic Games, **(NTS 1b, 1d 3 a,c, h)**			3.1 Pan-Hellenic Games 3.2 Abolition of Ancient Olympics 3.3 Revival of Modern Olympic Games 3.4 Olympic symbol, flag, motto, emblems and flame 3.5 Types of Olympic competitions
	CLO 4. differentiate between health related and motor skill related physical fitness, **(NTS 1b, 1d 3 a,c, h)**			4.1 components of health related fitness 4.2 components of skill related fitness
	CLO 5. outline procedures for providing basic first aid in schools, **(NTS 1b, 1d 3 a,c, h)**			5.1 Definition and principles importance of first aid 5.2 Qualities of a first aider **5.3** Types of physical injuries
	CLO 6. how the skeletal system and muscular system work to bring about movement **(NTS 1b, 1d 3 a,c, h)**			**6.1** Divisions of the skeleton 6.2 Classification of bones 6.3 Functions of the skeleton 6.4 Types and characteristics of joints 6.5 Types of muscle, characteristics and functions
	CLO 7. improve the individual performance in basic or fundamental patterns of physical activity and recreational games. **(NTS 1b, 1d 3 a,c, h)**			7.1 Space Awareness: Locations, directions, levels, pathways and range of extensions. 7.2 Skill themes and Gymnastic activities
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	Principles	*Nature, Meaning,	**Discussion:** Teacher first introduces the topics

		of Physical Education	Aims and -Objectives of Physical Education	through a lecture and then leads the class to discuss the topics. Teacher provides feedback to elicit cooperation and builds confidence to enable students contribute freely to the discussion.
	2	History of Physical Education	*History of physical education in Ancient Greece (Athens and Sparta) * Ancient and Modern Olympics * The roles of Emperor Theodosius and Pierre de Coubertin * History and development of P.E. teachers in teacher education in Ghana	Discussion
	3	Physical Fitness	* Types – Health-related and related * Components – definition, how to enhance and measure	Discussion Demonstrations
	4	First Aid	*Definition and aims of first aid *Principles and Importance of first aid *Qualities of a first aider * Types of physical injuries (wounds, sprain, strain, fractures, dislocation, and	Discussion Demonstrations Practical

	5	Introduction to anatomy and physiology	* Divisions of the skeleton – axial and appendicular. * Classification of bones – flat, irregular, long and short. * Functions of the skeleton * Joints – types, characteristics * Types of movements at joints * Types of muscle, characteristics and functions	Model analysis Observation Demonstrations Discussion
	6	Developmental Games (movement concept)	* Space Awareness: Locations, directions, levels, pathways and range of extensions. **NB**: Add activities that can be performed at the various concepts.	Practical
	7	Developmental Games (skill themes) and Gymnastic activities.	* Balancing, dodging and dribbling as to be applied in activities such as musical chairs, collecting tails, running through skittles etc. * Log, forward and backward rolls, astride and through vaults, cartwheel.	Practical
	8	Recreational Games	* Filling of bottles *Tug of peace * Sack race *Lime and spoon race	
Course Assessment Components: (Educative	**COMPONENTS 1 & 2 FORMATIVE ASSESSMENTS - 40% AND COMPONENT 3, SUMMATIVE - 60%** **Component 1** Formative assessment Quizzes and Exercises 20%			

assessment of, for and as learning)	Assesses: CLO 1,2,3,4 (NTS 1b, 2c, d, e, 3 a, c, h; NTECF 16,20, 45) **Component 2** Practical observation, group and individual presentations and analysis of various activities. 20% Assesses: CLO 4, 5, 6, 7, 8 (NTS 1b, 2c, d, e, 3 a, c, h; NTECF 16, 20 45 **Component 3:** Summative assessment (End of semester examination on units 1 to 8) 60% Assesses: CLO 1,2, 3, 4, 5, 6, 7, 8 (NTS 1b, 1d 2c, d, e 3a, c, h; NTECF16,20,45)
Instructional Resources	1. Computers (Laptops or PCs) for playing back Audio and Video files 2. Audio and Video recorders for recording and playback of educative materials
Required Text (core)	Ammah, J. (2004). *Physical education for the basic school teacher*. Winneba: The Institute for Educational Development and Extension. Attah, K. K., & Awuni, W. (2001). Teaching physical education in basic schools. Accra: Ministry of Education. Bucher, C. A. (1992). Foundations of physical education. New York, NY: C.V. Mosby. Karbo, J., Ogah, J. K., & Domfeh, C. (2005). *Anintroduction to physical education* (Centre for Continuing Education Module, University of Cape Coast). Cape Coast: University Printing Press
Additional Reading List [10]	Kodzi, E. T., & Boateng, B. L. (2002). *Teachingand learning athletics for schools and colleges.* Cape Coast: KBB Books. Lumpkin, A. (1998). *Physical education and sport* (4th ed.). New York, NY: WCB/MCGraw-Hill. Ogah, J. K. (2009). *A basketful of health and safety for the early childhood environment.* Paper presented at the National Conference on Early Childhood Education. University of Cape Coast. December 16-17, 2009. Ogah, J. K. (2010). *Developing and promoting active lifestyles for healthy living and national development. West Africa Journal of Physical & Health Education, 14, 47-70.* *Powers, S. K., & Howley, E. T. (2001). Exercise physiology: Theory and application to fitness and performance (4th ed.). New York, NY: McGraw Hill Companies.* *Sue, R. W. (1994). Essentials of nutrition and diet therapy (6th ed.). St Louis: The C.V. Mosby Company.* *Wuest, D. A., & Bu*cher, C. A. (2001). *Foundations for physical education and sport*. Boston: WCB/McGraw Hill.

PERFORMING ARTS AND SOCIETY

CONTEXT

The Ghanaian child is born into a society in which the Performing Arts play a very pivotal role. Apart from entertainment the arts serve as a social barometer measuring the pressures exerted by the everyday lived experiences of Ghanaians. The Performing Arts is the total expression of Ghana's culture. From infancy the Ghanaian child is exposed to music, dance and drama as social phenomena. A study of the Performing Arts will expose students to the uses and functions of the Performing Arts in the social, economic, political and religious lives of Ghanaians. It will enable students to explore the meanings of music, dance and drama in everyday life and their roles in the formation of social identities. Furthermore, it will help students to understand the influences of the Performing Arts on society as well as the influences of society in the changing trends of the Performing Arts. Apart from enabling students to develop a *feelingful reaction* to the Performing Arts it enhances and develops creativity among students and introduces them to career opportunities in music, dance and drama. The role of the Performing Arts in the development of the cognitive, emotional and psychomotor domains has received universal recognition. A study of Performing Arts by trainee students will equip them with skills, content and knowledge to impart same to pupils in the basic schools. It will also prepare them for careers and further studies in the Performing Arts.

Course Title	**Performing Arts and Society**						
Course Code:	**EBS 122**	**Course Level: 100**		**Credit Value: 3**		**Semester: 1**	
Pre-requisite	Basic knowledge of the Performing Arts (Music, Dance and Drama) in Ghana (eg. Popular music and dance forms, indigenous ensembles, drama and dance drama)						
Course Delivery Modes	**Face -to - face**[1] √	**Practical Activity** [2] √	**Work-Based Learning** [3] √	**Seminars** [4] √	**Independent Study** [5] √	**e-learning opportunities** [6] √	**Practicum** [7] √
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This course addresses the multiple ways in which the Performing Arts are social activities. It introduces students to a variety of perspectives in the study of music, dance and drama as social phenomena, drawing on case studies from Ghana and the rest of Africa. It also exposes students to the uses and functions of the Performing Arts in the social, economic, political and religious lives of Ghanaians. The meanings of music, dance and drama in everyday life and their roles in the formation of social identities are explored. Furthermore, the course sheds light on the influences of the Performing Arts on society as well as the influences of society in the changing trends of the Performing Arts. Issues such as migration, cultural commoditization, globalization, emerging technologies, and how these impacts the Performing Arts are fully explored in this course. In addition, the course introduces students to music and dance performance – music and dance ensemble work, performance on solo instruments,						

	drama and dance drama. Students are required to join a music and dance ensemble and also choose at least, one music instrument to study. The course encompasses the pillars of Skill, Knowledge and Content in addition to addressing the following among others: **NTS 1b, 1e, 1f, 2c, 3e, 3i; NTCEF pages 16 and 21**	
Course Learning Outcomes [8]: including INDICATORS for each learning outcome	**Outcomes** By the end of the course, the student will be able to:	**Indicators**
	1. Examine the value of the Performing Arts in Africa with particular emphasis on Ghanaian society (NTS 1b, e, f; NTCEF pages 16 and 21)	1. Identify the values of Music and Dance in Africa with particular reference to the Ghanaian society
	2. Examine the role of the Performing Arts in Ghana's development (NTS 1b, g; NTCEF pages 16 and 21)	2. Show how music and dance contributes to Ghana's development (economically, politically, socially, emotionally, spiritually etc).
	3. Identify and classify musical instruments found in Africa and Ghana in particular (NTS 2c, 3k; NTCEF pages 16 and 21)	3. Sort Ghanaian musical instruments according to a specified order
	4. Describe some of the Performing Arts groups in Ghana (NTS 2c, 3k; NTCEF pages 16 and 21)	4. Describe selected Ghanaian music and dance ensembles
	5. Assess the lives and contributions of selected Performing Arts personalities to the development of the Performing Arts in Ghana (NTS 3k, n, p; NTCEF pages 16 and 21)	5. Demonstrate the relationship in the developmental trends of society and its music and dance
	6. Show how society and the Performing Arts co-influence each other (NTS 1c, f, g; NTCEF pages 16 and 21)	6. Identify some Performing Arts personalities whose works have excelled in pushing the National Development Agenda
	7. Perform selected music and dance pieces in ensemble and solo modes (NTS 2c, d, 3k; NTCEF pages 16 and 21)	7. Demonstrate steps in the performance of selected Ghanaian music and dance ensembles
	8. Develop skills of discriminatory listening and observing (NTS 2c, d, 3k; NTCEF pages 16 and 21)	8. Show heightened skills in perception and conceptualization.

Course Content	Units	Topics:	Sub-topics (if any):	Teaching and learning activities to achieve learning outcomes
	1	**Types of music and dance in Ghanaian society**	a) Traditional/folk music and dance	Teacher plays recorded Ghanaian indigenous music and dance ensemble pieces for students to listen and watch (online resources such as YouTube can be helpful here). Teacher leads students to discuss the various traditional and folk music and dance types found within the ethnic groups in Ghana. They will look at the origins of the ensembles as well their instrumental set up and occasions on which they are performed. Students learn to perform, at least, two of the ensembles. Students will look at male and female ensembles and discuss reasons for the creation of female ensembles as distinct from male ones.
			b) Art music/artistic dance (Choreographed dances)	Students listen to art music compositions from Ghanaian composers and watch artistic dance pieces by Ghanaian choreographers played from CDs, flash drives, streamed online or from such other media. Students discuss the compositions and dance pieces noting artistic devices used in these music and dance compositions.
			c) Popular music and dance	Teacher plays popular music and dance pieces and leads students to discuss them. Students should note, among others, the instrumentation, style and the lyrics of the pieces and note their significance.
	2	**The place of the Performing Arts in Ghanaian society**	Uses and functions: a) Traditional society Contemporary Ghanaian society	Teacher leads students to discuss the role of the Performing Arts in Ghanaian society, e.g. entertainment, career, physical training, cognitive development, solidarity and social cohesion, and identity
	3	**Classification of**	a) Membranophones	Teacher shows students examples of music

		music instruments	b) Idiophones c) Aerophones d) Chordophones	instruments (real instruments, pictures, video, etc.) and leads them to discuss the basis for the classification of music instruments. Students discuss the materials used in the construction of music instruments.
	4	**Performing Arts Groups in Ghana**	Set works for the year	Teacher leads students to study Performing Arts groups set for the year. Students listen to or watch performance(s) by the selected groups.
	5	**Performing Arts personalities in Ghana**	Set works for the year	Teacher leads students to study the works of selected Performing Arts personalities set for the year.
	6	**Performance Studies**	Ensemble and solo instrument study a) Ensemble work (music, dance or drama) b) Solo work	Students join music, dance or drama groups and learn pieces for performance Students select one music instrument for study.
Course Assessment Components[9]: (Educative assessment of, for and as learning)	Assessment is made up of two major sections: Formative (40%) and Summative (60%). The formative assessment is further divided into two components with equal weightings: Theory and Practical. **Component 1: Theory (Exercises, Quizzes and Assignments) – 20%** Students: a) Discuss the value of the Performing Arts and the role they play in Ghana's development (CLO 1&2) b) Identify and classify African/Ghanaian indigenous musical instruments. i) Describe the materials used in the construction of named music instruments ii) Listen to and identify the sounds produced on each of the different categories of instruments (CLO 3 & 8) c) List Performing Arts groups in Ghana and present write-ups on them for class discussion. The write-ups must cover key Performing Arts personalities; their biographies, contributions, how their works have influenced society and how societal changes have influenced their works (CLO 4-6) **Component 2: Practical (Portfolio assessment) – 20%** a) Students study specified pieces in groups or individually (in the case of a solo music instrument) and perform them. They keep a folder in which anecdotal records of progress, challenges, innovations and so on are recorded. The teacher meets them periodically to discuss these anecdotes and to chart common strategies for			

	improving their performances. These anecdotes are collected in the end and scored. b) Students put up their performances individually or in groups. The performances may be music or dance ensemble work, drama, dance drama or solo music. (CLO 7&8) **Component 3: Summative Assessment – 60%** This is made up of 20 objective questions (20 marks) and two essays (20 marks each) set by the teacher to cover all aspects of the CLO 1-8.
Instructional Resources	Required reading text, pre-recorded audio/video of Ghanaian musical types (indigenous, popular and art/classical), Laptop or playing device, pictures/paintings of selected music and dance personalities, internet access, music instruments (eg. Synthesizer, drums, atenteben, guitar etc.)
Required Text (core)	Agordoh, A. A. (1994). *Studies in African Music*. Accra: St. Anthony Press. Amuah, I.R., Adum-Attah, K., and Arthur, K. (2005). *Music and dance for colleges of education: Principles and methods*. Kumasi: Yaci Publications. Nketia, J.H.K. (1975). *The Music of Africa*, New York: W.W. Norton. Paschal, Y.Y. (2011). *Music and Dance Traditions of Ghana: History, Performance and Teaching*. Jefferson, NC: McFarland and Company, Inc.
Additional Reading List [10]	Adum-Attah, K. (1997). *Nana Ampadu: Master of Highlife*. Unpublished MPhil dissertation, University of Cape Coast, Cape Coast. Bame, K.N. (1981). Come to laugh. Accra: Baafour Educational Enterprises Ltd. Nketia, J.H.K. (1973).Folk Songs of Ghana. Accra: Ghana Universities Press. Nketia, J.H.K. (1963).Drumming in Akan Communities of Ghana. Edinburgh: Thomas Nelson and sons, Ltd. Nketia, J.H.K. (2005).Ethnomusicology and African Music – Collected papers, Volume One: Modes of Inquiry and Interpretation. Accra: Afram publications. Manford, R., Wilson, C.B. and Flolu, J.E. (1993) Music for Senior Secondary Schools. Bombay: H. Gangaram & Sons.

LITERATURE IN ENGLISH I– STUDIES IN AFRICAN POETRY

CONTEXT

The goal of the course is to sustain an unwavering focus on developing knowledge, skills, pedagogy and essential understanding required of a good English teacher to teach English Language and Literature in English from Early Childhood through to the Junior High School in Ghana. The course is to equip the student-teacher with an understanding of contemporary theories, concepts and practices in English Studies and teaching in enhancing literacy. The English courses introduce the student-teacher to the basics of language acquisition skills as well development strategies. The skills: listening, speaking, reading and writing, are given premium throughout the student-teacher's training. These skills are crucial for their academic endeavours, which they will further impart to the Ghanaian child. Though the current teacher training curriculum addresses it, intensifying it comes with numerous advantages to all stakeholders of Ghanaian education. The courses are designed in a manner that the sub-disciplines complement one another. There are ICT components imbedded in the teaching-learning activities to facilitate interactive and learner-focused approach. There is a symbiotic approach in the training of the teachers; as the trainees acquire these skills for personal use and also impart to the students. The detailed course descriptions and objectives pay attention to the individual courses and attempt to draw synergy from "The National Teacher Education Curriculum Framework" and "National Teachers' Standards for Ghana Guidelines". The assessment portfolios would pay heed to Bloom's Taxonomy of higher level questioning.

Course Title	**Literature in English I– Studies in African Poetry**						
Course Code	**EEC 121:**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**1**
Pre-requisite	Students have been introduced to poetry at the senior high school						
Course Delivery Modes	**Face -to – face** **X**	**Practical Activity** **X**	**Work-Based Learning [3]**	**Seminars [4]**	**Independent Study** **X**	**e-learning opportunities** **X**	**Practicum [7]**
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	The course offers studies in Literature in English. This component deals with the study of African poetry, whose elements, the Ghanaian student-teacher is familiar with. The poems have been selected from both oral and written poetry, and these are from both male and female African poets. The various phases of African poetry will be explored in the study. The themes of the selected poems include: social criticism, colonialism, independence, war, peace, love and gender issues in contemporary Africa. Students will be required to study some selected poems and critique them. They will look at themes, related ideas and techniques including language use, the relevance of the poems to contemporary situations and come out with their personal response to the poems. This course will help the student-teacher to gain the needed professional knowledge that will be used to engage the pupil in relevant discourse. The course will be delivered through whole group discussions, small group discussions, assignments, presentations. Assessment will be done through quizzes, projects, group presentations and examination. The course fulfils the following NTS and NTECF requirements. NTS 2 c, f , 3 e, f, g, i).						
Course Learning Outcomes [8]: including INDICATORS for each learning outcome	**Outcomes** By the end of the course the student will be able to:				**Indicators**		
	1. identify the three phases of African Poetry: pre-colonial, colonial and post-colonial. (NTS 2c, f, 3f, i)				1.1 discuss what poems are, and the features of a poem. 1.2 Discuss the types of poems. 1.3 discuss the various phases of African poetry.		
	2. describe the features of each of the phases. (NTS 2c, f, 3f, i)				2.1 identify the features of the various phases of the African poetry.		

	3. discuss thematic pre-occupation of male and female poets.(NTS 2c, f, 3f,g i,)			3.1 read both poems written by both male and female poets and discuss the various themes identified.
	4. identify literacy devices used in selected poems. (NTS 2c)			4.1 discuss literary devices 4.2 identify the literary devices used in the poems studied.
	5. appreciate poetry for the love of it. (NTS 2c, f)			5.1 work in groups to discuss poems, basing discussion on the intended message of the poet, the use of language, imagery etc. 5.2 discuss the rhyme scheme of the poems.
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	1.Introduction to Poetry	1. What is poetry? 2. Oral African Literature: forms, features, etc. 3. Oral and written poetry a. oral poetry b. What is oral poetry? c. written poetry d. What is written poetry? e. What is difference between oral and written poetry? 1. Theme(s)/subject matter a. related ideas b. message c. diction	Review the earlier discussion on prose and discuss the nature of poetry. Review Oral African Literature, its forms, features, etc. Discuss oral and written literature and relate the concepts to poetry. Discuss the differences between them. Project a poem and guide students to discuss the items.

	2	2.Elements of poetry	2.Elements of Poetry a. technique b. imagery, simile, metaphor, personification, etc.	Discuss the elements of poetry (using illustrative materials)
	3.	3. Phases of African poetry	Phase I: Before Colonization – Features: a. Mostly oral renditions of traditional values, beliefs and expectations. (unwritten, anonymous) b. Forms of African poetry: i. Religious poetry; ii. Incantatory poetry, iii. Salutation or praise poetry, iv. Funeral poetry (dirges), v. Occupational poetry, vi. Heroic poetry etc. c. Mode of transmission: transmitted through oral methods such as songs d. Major theme: love e. Purpose: educate, entertain, celebrate and praise heroes and gods (Critical study of some of the works of this era.)	Give an exposition on life prior to colonization – nature of life and general outlook of life Project a poem that reflects the period as illustration to discuss the poetic concerns of the period. Discuss mode of knowledge transmission, and purpose of performance
	4	4. Phase II African Poetry During Colonization	- Features a. Poetry written by Africans (pioneer poets) b. Themes: frustration, protest against all form of colonialism, disillusionment, etc. c. Mood: sadness, uncertainty and hazy, etc.	Use leading questions to guide students to discuss the general pattern of life of the

			d. Style: simple and straightforward e. Examples of the pioneer poets: i. Michael Dei-Anang ii. Dennis C. Osadebay iii. Gladys May Casley-Hayford iv. Raphael E. G. Armattoe (Critical study of some of the works of this era.)	period. Discuss the apprehensions of the people that provided basis for their literary expressions. Project illustrative poems for discussion.
	5.	Phase III African Poetry After Colonization	- Features a. Poetry written by a group of learned Africans (modern poets) b. Themes: exposing the ills of African leaders, neocolonialism, racial discrimination, disenchantment c. Mood: mixture of joy and despair d. Style: simple and straightforward (some imitated western poetic styles – like using rhyming words) e. Examples of modern poets: i. Wole Soyinka ii. J. P. Clark iii. Kwesi Brew iv. Lenrie Peters (Critical study of some of the works of this era.)	Let the students brainstorm on the possible period and discuss its characteristics. Discuss the attributes of the poets of the period and the preoccupations of their poems. Use illustrative poems to discuss mood, attitude and style of writing.
Course Assessment Components: (Educative	Component 1: Formative assessment (40%) Summary of assessment methods: Class participation (10%); group presentation on the phases of African poetry (10%); Individual assignments- analysis of a poem (10%); and a quiz – short answer questions on poem and literary devices (10%)			

assessment of, for and as learning)	Assessing Learning Outcomes: 1, 2, 3, and 5. Component 2: Summative assessment: (60%) End of semester examination on units 1 – 5 to develop core skills such as knowledge application, personal development and appreciation African creativity. The examination will adopt varied approaches; from short answer questions to essay questions. Assessing Learning Outcomes: 1-5.
Instructional Resources	Projector and computer, audio tape and phones
Required Text (core)	Egudu, R.N. (1979). *The Study of Poetry*. Ibadan: University Press
Additional Reading List [10]	Dekutsey, W. A. & Sackey J. (2004). *An anthology of contemporary Ghanaian poems.* Accra: Woeli Publishing Services. Mayhead, R. (1981). *Understanding Literature*. Cambridge: C.U.P. Minot, S. (1993). *The Three Genres*. New Jersey: Patience Hall. Murphy, M. J. (1972). *Understanding Unseens*. London: George Allen & Unmwin. Senanu, K. E. & Vincent T. (1988). *A selection of African poetry*. (2nd ed.). Essex: Longman. Torto R. T. (2014). *General knowledge of literature: introduction to literary devices, terms and concepts.* (Revised edition) Cape Coast: Nyakod Printing Works.

BASIC DESIGN

CONTEXT

The Visual Art component of the BDT syllabus in Ghana's JHS education system requires fundamental knowledge and skills in basic design, colour application and psychology and drawing and painting. A study of the visual art syllabus taught in Ghana's colleges of education reveal inadequate drawing and designing content which has made the trainee teachers handicap in those skills therefore affecting effective teaching of the subject in JHS across the country. It is therefore important that an enhanced art education curriculum with adequate content in drawing and design is developed and implemented in our colleges of education.

Course Title	**BASIC DESIGN**						
Course Code	**EBS130**	Course Level:	**100**	Credit Value:	**2**	Semester	**ONE**
Pre-requisite	**General Knowledge in Art and Basic Design and Technology**						
Course Delivering Mode	**Face-to-face**	**Practical Activity**	**Work-Base Learning**	**Seminars**	**Independent Study**	**e-learning opportunities**	**Practicum**
Course Description for significant learning (indicate NTS, NTECF, BSC, GLE to be addressed	This course introduces teacher trainees to the basic tools, supports, media, theories, principles, processes, methods and techniques of drawing and painting objects and human figures. It also aims at equipping the teacher trainees with basic colour theory, psychology and application in visual arts and applies principles of element and principles of design and idea development in planning and production of artefacts. It will also introduce trainee teachers to basic concept of creativity and aesthetics. The course will be delivered through lectures, discussions, practical demonstrations, assignments, field trips, industrial attachment, project works etc. and it will be assessed through individual practical assignments, quizzes, seminar presentations, and aesthetic appreciation, criticism and evaluation and class jury. NTECF; NTS p1 1b, le lg: NTSp13 2c, 2e, NTS p 14, 3d, 3e, 3f).						
Course Learning Outcome: including INDICATORS for each learning outcome	**Outcomes** **CLO 1.** Demonstrate knowledge, skills and competencies in drawing and painting objects, figures and landscapes and apply principles, processes, methods and techniques			**Indicators**. 1.1.Explain the concept of elements and principles of design 1.2. Explain theories and principles of applying colour in visual arts 1.3. Demonstrate the ability to apply skills of principles of design in Visual Art in projects			

	of elements and principles of design and idea development to produce pictures.			1.4.Explain the concept of idea development in creative arts 1.5. Demonstrate skills of basic design principles and processes to execute two-dimensional and three-dimensional visual Arts projects. 1.6. Explain the concept and principles of composition 1.7. Explain concepts, processes and principles of drawing. 1.8. Identify objects, figures and landscapes 1.9. Describe drawing and painting tools, materials and techniques. 1.10. Demonstrate skills in drawing and painting pictures
Course Content	**Unit:**	**Topics:**	**Sub-topics:**	**Teaching and learning activities to achieve learning outcomes**
	1	**Basic Design theories**	1. Concept of design and Elements and principle of design 2. Classification of elements and principles of design 3. Creating the elements and principles of design	1.1. Tutor should lead students in discussions to understand the concepts of design, design elements and principles used in visual arts**.** Students explain design as a process and product and distinguish between elements and principles of design used in visual arts. 1. 2 Tutor must guide students to classify elements and principles of design, identify and create them and guide them to understand how they applied in art. Students should classify elements and principles of design into natural and man-made elements and principles, identify and create them through drawing, spraying, printing etc.
	2	**Colour**	1. Concepts of	2.1.

		theory, psychology and application	colour 2. Colour wheel 3. Colour Terms 4. Colour neutralisation 5. Colour interactions and symbolism	Tutor must lead students to discuss the historical background of the phenomenon of colour to unveil the origin of spectrum colours, how they were discovered and organised, and personalities associated with it. 2.2 Students narrate the history behind spectrum colours and list the spectrum colours in their natural order of appearance. 2.3. Lead students to explain the concept of primary colours, state the light primary colours and inter-mix them to obtain light secondary colours and explain the phenomenon of additive effect. 2.4. Tutor must lead students to understand the concept of pigment colours, their origin and state pigment primary colours and the products of their inter-mixtures. Students distinguish between light and pigment colours and discuss their inter-mixtures. 2.5 Tutor must lead the students to draw and interpret the twelve-point colour wheel and use it to identify principal, intermediate warm and cool colours. 2.6. Tutor must guide students to define and explain basic colour terms such as hue, purity, value, contrast, harmony, discord, tint, shade, advancing colours, receding colours, neutral colours, tone, etc. and colour schemes such as monochrome, achromatic, polychromes (Dichrome, trichrome, tetrachrome

				etc.), analogous, complementaries, triadic etc. Students draw and paint the twelve –point colour wheel and use it to select and paint different colour schemes. Note: tutor must point out the difference between hue and colour to students. Tutor must also lead students to understand characteristics of types of artificial lights (Mercury vapour, Tungsten, Fluorescent,) and daylight and how they can neutralise or enhance pigment colours and the symbolic uses and meanings of colours used in indigenous Ghanaian culture. 3.1. Tutor must use lecture and visual demonstrations to explain the concept and principles of idea development to trainees. E.g. Idea development involves drawing different shapes or forms from an object to develop new shapes or forms while maintaining the identity of the original object in the new ideas.
	3	**Idea Development**	1. Concept of Idea Development 2. Basic idea development techniques**:** addition, subtraction, intersection, integration and overlapping. 3. Advanced idea development techniques:	3.2. Tutor must task trainees to explore the environment and identify a non-perishable natural object such as twig, shell, bone etc. and draw it at different positions in outlines. Trainees must further shade and paint the drawings using variety of shading and painting techniques. 3.3 Tutor must demonstrate to teacher trainees how to use basic idea development techniques such as addition, subtraction, intersection, integration and overlapping to manipulate their natural objects to create two-dimensional ideas such as

			abstraction techniques (Folding, twisting, blowing, truncation, pulling, bending, compression etc.)	ideograms, logos, motifs, traditional and circular symbols etc. 3.4. Tutor must also demonstrate to teacher trainees how to use abstraction techniques to manipulate natural objects to develop new ideas. Trainees apply basic and advanced idea development techniques to manipulate their natural object, slab, beam and column to develop 2D and 3D ideas that can be painted, printed, modelled, welded, casted, carved etc.
	4	**Principles of Product Design**	1.Factors to consider when designing a product 2. Product development process. Product development and evaluation	4.1 Tutor must lead teacher trainees to identify and discuss factors that must be considered when designing a product. E.g. Functionality, economy, durability, aesthetics, etc. 4.2. Tutor must also lead trainee teachers to discuss the processes involved in product design and production and evaluation. The product design processes include the following: ▪ Identifying the problem ▪ Defining or Specifying the problem ▪ Investigating the problem ▪ Finding possible solutions ▪ Making a sketch model ▪ Working drawing ▪ Making a prototype ▪ Evaluation 4.3.

				Trainee teachers must be taken on a field trip to product development factories to observe how idea development processes and principles of ides development are applied in industry. They can also be attached to such companies within their catchment area as supporting practice and assigned to industrial mentors to guide them through out their internship period. 4.4 Tutor must task trainee teachers to independently or collaborate to apply their knowledge, skills in creativity, idea development and computer applications in art design and produce 2D and 3D artefacts and write a comprehensive write-up on the final product. Trainees' products must be subjected to rigorous jury in class.
	5	**Drawing and rendering**	1. Concept and importance of drawing 2. Drawing and painting tools, equipment, support, media and techniques 3. Drawing processes 4. Principles of perspective drawing 5. Object and figure drawing	5.1. Tutor must lead students to discuss the concept and importance of drawing in art education, industry and visual communication. He must guide students to understand characteristics, uses and maintenance of drawing and painting tools, equipment, support and media and discuss types, principles and application of perspective drawing in visual arts. 5.2. The tutor must also lead students to discuss the nitty-gritty in drawing processes: observation, perception, outline drawing, detailed drawing and rendering. 5.3.

			Principles of composition drawing	Tutor must guide students to apply their knowledge in drawing theories to draw shade and paint natural and man-made objects and figures and compose into still-life, figurative and landscape pictures. Students apply the principles of perspective drawing, landscape drawing, object and figure drawing, composition drawing and their knowledge and skills in basic design, and colour psychology to plan and produce standard pictures. The paintings must include themes that address gender issues and inclusivity in the larger Ghanaian society.
Course Assessment Components (Educative assessment of, for and as Learning)	**Component 1: Formative assessment:** Quizzes, individual and group assignments (Practical and written), Field research, seminar presentations and jury (weighting= 40%) **Core skills to be developed**: Critical thinking, interpersonal and collaborative skills, research skills and Presentation skills, creative skills, organisational skills Assessing learning outcomes: CLO 1 (Units 1-5) **Component 2: Summative assessment**: (End of semester examination): 1. Part A: Project work ▪ Write-up=10% ▪ Actual work:20% 2. Part B: Written exams=30% Total marks=100% **Core skills to be developed**: Critical thinking, interpersonal and collaborative skills, research skills and Presentation skills. Assessing learning outcomes: CLO, 1-5 (Units 1- 3)			
Instructional Resource	Textbooks, journals, ICT tools, computer, projector, supports, art brushes, B pencils, paints, fixatives,			
Required Text (core)	Ocvirk, G. O., Stinson E. R., Wegg P., Bone O. R. and Cayton L. D. (2002). Art fundamentals: Theory and practice (9th Ed.). New York: McGraw-Hill Companies Inc.			

Additional Readings	1. Fulcher, A. et al. (1998). *Painting and decorating*: An information manual (4th Ed). United Kingdom: Blackwell Publication. 2. Stanyer, P. (2013). *A complete book of drawing techniques: A professional guide for artist.* London: Arcturus Publishing Ltd. 3. Ryder, A. (2000). *The artist's complete guide to figure drawing: a contemporary perspective on the classical tradition.* New York: Watson- Guptill Publications 4. Gene F. (2004). *The art of pencil drawing.* Irvine: Quayside Publishing Group 5. Amenuke, S. K. et al. (1999). *General knowledge in art for senior secondary schools.* Accra: Ministry of Education. 6. Agyarkoh E. (2016) Graphic communication design for schools and colleges (first edition). Cape Coast: Pas-Let Business Centre.

FUNDAMENTALS OF IT EDUCATION

CONTEXT

The emergence of the information age has brought to the fore, the important role that information, knowledge and technology can play in facilitating socio-economic development. The effective use of information and knowledge is becoming the most critical factor for rapid economic growth and wealth creation, and for improving socio-economic well-being. ICT should be integrated within all the learning activities of the school across all subjects. Targets for students' use of ICT relate to the usage of various ICT tools, broader issues associated with assessing information using these tools, and other management skills. As ICT is an important element in most subjects, ICT-related skills are assessed through traditional school subjects.

The use of ICT in education can play a crucial role in providing new and innovative forms of support to teachers, students, and the learning process more broadly. With globalization, the information revolution, and increasing demands for a highly skilled workforce, nations are increasingly prioritizing education. The potential and promise of ICT use in education is clear: when implemented correctly, software in the classroom, for example, can allow students to learn at their own pace and tablets can help children develop important digital skills and computer know-how that they'll need to succeed in our knowledge-based economy. The programme has been designed to incorporate Digital Competence which cover basic education. The programme's priority areas have been related to ICT infrastructure, competence development, research and development, digital teaching resources, curricula and working methods.

The use ICT as an integrated tool for innovation and quality development in education in Ghana.

<table>
<tr><td>Course Title</td><td colspan="7">Fundamentals of IT Education</td></tr>
<tr><td>Course Code</td><td>EBS 109</td><td>Course Level</td><td>100</td><td>Credit value</td><td>3</td><td>Semester</td><td>1</td></tr>
<tr><td>Pre-requisite</td><td colspan="7"></td></tr>
<tr><td>Course Delivery Modes</td><td>Face-to-face ■</td><td>Practical Activity</td><td>Work-Based Learning</td><td>Seminars</td><td>Independent Study ■</td><td>e-learning opportunitie■</td><td>Practicum</td></tr>
<tr><td>Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)</td><td colspan="7">This course aims to further deepen students' understanding of Information Technology (IT) concepts they learnt at the pre-tertiary level. As a course aimed to review and deepen students' understanding of IT concepts at the pre-tertiary level and deepen their understanding, some of the topics that would be covered include the history and evolution of computers, computers and other portable mobile devices used in education and factors to consider when selecting hardware for educational purposes. Also covered in this course are specialized software used for teaching and learning. The approaches that would be used in the delivery of this course would prepare trainees to be mindful of gender roles.
(NTS 2b, 2c, 3e-3m, 3p; 3d, & 3j NTECF Pillar 1)</td></tr>
<tr><td rowspan="4">Course Learning Outcomes: including INDICATORS for Each learning outcome</td><td colspan="4">Outcomes
1. evaluate the implication of the evolution of computers for education presently and predict the direction of for the future. NTS 2b, 2c, 3e-3m, 3p; NTECF Pillar 1</td><td colspan="3">Indicators
1.1 Using computer applications to increases students' motivation for learning management
1.2 Trace the history of computing to the present day personal computers and explain how useful computers have become in education and the way forward</td></tr>
<tr><td colspan="4">2. Outline and explain the application of computers and other portable mobile devices in education. NTS 2b, 2c, 3e-3m, 3p; NTECF Pillar 1</td><td colspan="3">2. Analyse and highlight the important factors to be considered in terms of computer usage and purpose before implementing decisions to acquire computers</td></tr>
<tr><td colspan="4">3. demonstrate the understanding of factor to consider when selecting hardware for educational purposes. NTECF, NTS, 3d, & 3j</td><td colspan="3">3. Explain the affordances of ICT tools, hardware, software, information, integration literacies, storage and use of information for various educational purposes.</td></tr>
<tr><td colspan="4">4. Outline and explain the different types of educational software used for teaching.
NTECF, NTS, 3d, & 3j</td><td colspan="3">4. Locate professional learning networks used to support teaching and learning; and explain the different types of educational software used mainly for teaching. e.g. Matlab</td></tr>
</table>

	5. demonstrate the understanding of factor to consider when selecting specialized software for teaching and learning. NTECF, NTS, 3d, & 3j		5. explain the dynamics involved in computer applications to be able to make useful decisions in selecting mobile devices and computers for the purposes of education.	
Course Content	Units	Topics	Sub-topics (if any):	Teaching and learning activities to achieve learning outcomes
	1	Integrating Educational Technology into the Curriculum		• Group project on the various ways educational technology can be integrated into curriculum. Encourage females to lead groups in order to address any gender stereotypes.
	2	Communications Networks the Internet and the World Wide Web		• Group discussion on network, Internet and the WWW. Encourage females to lead groups in order to address any gender stereotypes.
	3	Software for Educators		• Discuss the various software that facilitate teaching and learning
	4	Hardware for Educators		• Discuss the types of computer hardware and their accessories suitable for educational purposes
	5	Technology Digital Media and Curriculum Integration		• Use group projects to explain how digital media is integrated into curriculum. Encourage females to lead groups in order to address any gender stereotypes.
	6	The Changing Face of Education Teaching Online		• Brainstorm with students how technology is changing the face of online teaching

	7	Evaluating Educational Technology and Integration Strategies		• Discuss the various educational technology integration strategies
	8	Security Issues and Ethics in Education		• Discuss security and ethical implications of ICT in education
Course Assessment Components: (Educative assessment of, for and as learning)	A combination of formative and summative assessment including group tasks, quizzes, individual and take home assignment and examination will be used. **Assessment weighting** **Component 1: Formative assessment:** Quizzes, individual and group assignments (Practical and written), Field research, seminar presentations and jury (weighting= 40%) **Core skills to be developed**: Critical thinking, interpersonal and collaborative skills, research skills and Presentation skills, creative skills, organisational skills Assessing learning outcomes: CLO 1-3 **Component 2**: Summative Assessment 60% Practical Examination 30% Theoretical Examination 30% Assessing learning outcomes: CLO 1-5 Students will be graded as follows: **A**=80-100%; **B+=**75-79%; **B** =70-74%, C+ =65-69%, **C=** 60-64%, **D+=**55-59, **D=**50-54, **E<** 50 (Fail)			
Instructional Resources	Computer assisted instruction, MS-PowerPoint slides, YouTube videos			
Required Text (core)	Bitter, G. G., & Pierson, M. E. (2001). *Using technology in the classroom, (*5th ed.). New Jersey, Allyn & Bacon. Geisert, P.G., & Futrell, M. K. (2000). *Teachers, computers, and curriculum: Microcomputers in the classroom* (3rd ed.). Needham Heights, Allyn and Bacon. Gordon, D. T., (2000) *The digital classroom: how technology is changing the way we teach and learn,* (1st ed.). Harvard Education Letter. Shelly, G.B., Cashman T. J., Gunter G. A., & Gunter R. E. (2002). *Teachers discovering computers: Integrating technology in the classroom (*2nd ed.). Course Technology O'leary, T., & O'Leary, L. (2014). *Computer Essentials*. (25th ed.). O'Leary series, McGraw Hill/Irwin.			
Additional Reading List	Sharpe, V. (2008) *Computer education for teachers: Integrating technology into the classroom,* (6th ed.). McGraw Hill			

GENERAL BIOLOGY THEORY I

CONTEXT

Biology at this level should be seen as offering a lot of learning activities including observing live specimens even in their unique habitats. Eventually this will offer appropriate diverse cognitive load to the learner. The focus should be inquiry-based approach to be seen as a multifaceted activity that involves, listening at lessons, making observations, posing self-questions, examining books and other sources information etc to see what is already known. The student teacher will find it pleasurable as the instructor presents issues with the most friendly technological support coupled with the right pedagogical content knowledge. Student teachers should view every organism as possessing different structures that serve different functions in growth, survival and reproduction. Living systems at all levels of organization demonstrate the complementary nature of structure and function. For example, humans have distinct body structures for walking, holding, seeing and talking. Important levels of organization for structure and function are from the low level cell to tissue; then organ, system, and whole organism to ecosystem. Student teachers also should expand their investigations of living systems to include the study of cells. This period of student teachers lends itself very well to Human Biology. They can therefore develop the general idea of structure-function in the context of human organ systems working together. The knowledge in basic processes of sexual reproduction in flowering plants and humans can be concretized.

Course Title	**General Biology Theory I**			
Course Code	**EBS 114**	**Level 100**	**Credit Value 2**	**Semester 1**
Pre-requisite	**Integrated Science**			
Course Delivery Modes	**Face to face** **X** **Practical Activity** **Seminar**	**E-learning** **X**	**Case study** **X**	**Field Work** **X**
Course Description for significant learning	This course is designed to consolidate and also upgrade the content and skills that students have acquired from their lessons in Integrated Science at the SHS level. The course covers the following areas: cell structure with all the organelles and biochemical components (as seen in the light and compound microscopes), organization of cells into tissues, organs and systems, of classification, naming of organisms, general characteristics of the five Kingdoms of living things. The course also covers structure and functions of the parts of flowering plants; differences between monocots and dicots, and presentation of life as a cycle of being born,, developing to adult and reproducing for continuation of life. The course also takes a look at safety and security as basic needs of humans and therefore illnesses may be deemed a threat life. Diseases shall be treated as breakdown in structures or functions of organisms and			

	especially result of damage by infection by other organisms. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity. NTS: pg 14, 1a, 1c, 2b, 2f, 3a, 3e, 3h, 3k pp22-31	
Course learning outcomes	**On successful completion of the course student teachers will be able to:**	**Indicators**
	CLO 1. Describe the structure of a cell and its organization NTECF, NTS: 2c, p14, 3d, p15	1.3 Observation of prepared slides of cells under the microscope 1.4 Looking at student teacher's own preparation of cells 1.5 List the organelles to be observed in the electron microscope 1.6 Able to demonstrate simple physical processes by the use of live specimens
	CLO 2. Classify and name organisms NTECF, NTS: 2c, 3j	2.1Develop a chart of at least one Phylum or Class that describes the features used to sort out organisms in the group e.g. Class Insecta: three body parts 2.2 Write a reflective report on diversity in terms of colour of skin, sex, intelligence to embrace inclusivity in the classroom
	CLO 3. Describe the structure of a flowering plant and describe the functions of its parts NTECF, NTS: 2c, 3j.	3.1 Identify the time when most of trees on campus would have flowered 3.2 Drawing full flower and half-flower
	CLO 4. Describe the internal organization of various parts of the plant NTECF, NTS: 1b, 1f, 1g, 2c, 2e, 3a	4.1 Prepare temporal slides of TS of stem, leaf and root 4.2 Demonstrate the basic cell types that build up the entire structure of a tree from root tip to the apical meristem of the leaf
	CLO 5. Explain growth in plants NTECF, NTS: 3f, 3g, 3j	5.1 Demonstrate growth in plants as a continual process 5.3 Carry out experiments to show growth in some farm crops
	CLO 6. Outline the role of plant hormones	6.1 Brainstorming to reflect on misconceptions about

	NTECF, NTS: 2f, 3a, c, d.			plant hormones 6.2 Probing to identify plant hormones
	CLO 7. Acquire knowledge of health and diseases in humans NTECF, NTS 1b, 1f, 2c, 2e.			7.1 Outline the causative agents symptoms and treatment of diseases student teachers ever suffered
	CLO 8. Apply the knowledge gained in the course to everyday life NTS: 3k-p			8.1Supply appropriate examples under every topic treated
	Units	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes:**
Course Content: General Biology I	1	Classification and naming of organisms	Concept of classification Organization plan of classification Binomial system of nomenclature	Source information from Internet on attempts by philosophers like Aristotle for organization of the living world. Student teachers to make presentation The ranks/hierarchies to be developed like the organogram of their institution Brainstorm on earlier attempts until Carolus Linnaeus. Student teachers provide the scientific names of any five plants and five animals found on their campus
	2	General characteristics of the five Kingdoms of organisms	The five Kingdoms of Prokaryotae/Monera, Protoctisita/Protista, Fungi, Animalia and Plantae to be established	Students to observe an assembly of living things and draw some of the organisms. Field trip to be taken to a nearby Botanical Garden or Animal Holding Facility or beach depending on location for viewing to appreciate variety of organisms
	3	The cell	The cell as the living structural and functional unit	Plant and animal cells to be observed under the microscope. Students prepare own temporal slides of epidermis of *Talinum triangulare, Rheo discolor* and cheek cells

			The cell theory and classification of cells Cells in relation to tissues, organs and systems	Recount the historical background of the development of the cell theory Differences among prokaryotic, akaryotic and eukaryotic cells to be understood in terms of aggregation of cells into tissues to organs and systems
	4	The cell and its environment	The biophysical and chemical processes of the cell Diffusion Osmosis Plasmolysis Selective Permeability Active transport	Significance of these processes should be discussed Factors that affect activity Experiments to be conducted Haemolysis, turgity and crenation should be mentioned
	5	Cell function as illustrated by cellular respiration	Aerobic and anaerobic respiration The major steps of internal respiration in the release of energy Alcoholic fermentation and electron transport chain	Flow chart to illustrate glycolysis and Kreb's Cycle Co-operative learning on the role of ATP
	6	Cell function as illustrated by excretion in single-celled organisms	Excretion just by diffusion from the body surface	Discussion of products of excretion: CO_2, excess water, waste from nitrogen metabolism
	7	Structure and function of flowering plants	Vegetative parts of a flowering plant	Observation of live specimens collected by students themselves. Student teachers to be guided to list the various parts of the plants

			Reproductive parts of a flowering plant	collected and seek out a classification into monocots and dicots. Students attempt to list the various parts of the flower on the writing board Students teachers pick up flowers on campus but collection should specifically include *Delonix regia* (flamboyant), Hibiscus and Pride of Barbados. Terminologies for fused parts(gamo) and free parts (poly) should be introduced. Flower dissection should be introduced to demonstrate inferior and superior ovaries Walk around to observe the various reproductive patterns of plants Observation of mitosis and meiosis to link growth
	8	Reproduction	Types of reproduction Asexual reproduction: budding, vegetative propagation, fragmentation, cloning, parthenogenesis Sexual reproduction: Conjugation Formation of male and female gametes Reproductive systems of the male and female mammal	Dissection of small mammal should be carried out to display the reproductive organs and drawn. Method of dissection could be learnt on U-TUBE

	9	Internal morphology of plants	Primary and secondary functions of the vegetative parts of plants Tissues in the various part of the plant	Distinction should be made between monocotyledons and dicotyledons TS of leaf, stem and root should examined and drawn
	10	Growth	Basis of growth-cell division (mitosis), enlargement and differentiation Aspects of growth as increase in dry weight, irreversible increase in size, increase in number of cells Growth in plants	Observation of root tip and shoot tip are required. Regulation of growth by hormones should be mentioned Microscopic examination of the different regions of growth and development: region of cell division, elongation, differentiation, maturation The pro-cambium, inter-fascicular cambium, parenchyma cells, secondary phloem, secondary xylem and vascular cambium should be examined
	11	Health and diseases	Causative organisms of diseases Consideration of symptoms and treatment of malaria, tuberculosis, common cold and typhoid	Observation and drawing of preserved specimens of roundworms, tapeworms and guinea worm. Mention of water-borne and water related diseases. Identification on the campus and immediate environment potential conditions that can lead to contracting and devise ways of addressing the conditions. Assemble newspaper cuttings on news reports of disease outbreaks in your community
Course Assessment (Educative		**Component 1:** Formative assessment on the individual and group presentation Summary of Assessment Method: Individual and group presentations on cells, classification, nutrition and diseases (Core skills to be developed: Internet search, diversity of life, communicative skills and problem		

assessment: of, for and as learning)		solving) Weighting: 30% Assesses learning outcomes: CLO 1-3 Quiz 1: 15% to be compiled from questions submitted by Tutors. Class assignment(s), individual presentations, group presentations, etc: 15% **Component 2:** Formative assessment (Quizzes and Lab Reports) Summary of Assessment Method: One quiz on physiology of plants and animals (Core skills to be developed: Observation, creativity and critical thinking Weighting: 30% Assesses learning outcomes: ALL Quiz 2: 15% to be compiled from questions submitted by Tutors. Class assignment(s), individual presentations, group presentations, etc: 15% **Component 3:** Summative assessment Summary of Assessment Method: End of semester examination on all units (Core skills to be developed: critical thinking, personal development, problem solving) Weighting: 40% Assesses Learning Outcomes: All
Required references	Ghana Education Service (2004). Integrated Science I for UTDBE programme by distance: Course FDC 114. Accra: Teacher Education Division Mader, S. S. (2001). *Biology*. New York. McGraw-Hill companies, Inc Nyavor, C. B. &Seddoh, S. (2000). *Biology for senior Secondary Schools.* (2nd Ed.) London. Unimax Macmillan Roberts, M. B. V. (1982). *Biology: A functional approach.* (3rd Ed.) Hong Kong. Thomas Nelson Ltd Taylor, D.J., Green, N. P. O., Stout, G. W. & Soper, R. (1998). *Biological Science*. (3rd Ed) Cambridge, Cambridge University Press	
NB: It was pointed out that you may add information about the lecturer such as the telephone number and email address. You may also incude the venue(s) for the sessions where the interaction with the student teachers may occur. • **You may also have to include two additional columns i.e. Pre-Lecture Preparation and Post-Lecture Preparation where the student comes before, during and after lecture PREPARED.**		

GENERAL BIOLOGY PRACTICAL I

SPECIFIC CONTEXT ISSUES

All knowledge and theory in biology have originated from observation and experimentation. As a result, laboratory and field work are important components of undergraduate training and successful students develop a number of practical skills ranging from those required to observe, measure and record accurately, to those associated with operating up-to-date analytical equipment alongside broader skills involved in teamwork and effective study. The approach in practical now is not to offer the practitioner cook-book recipes but to offer the student-teacher the opportunity to find out a lot of things for himself/herself. It is therefore aimed at the student-teacher getting ownership of his own knowledge. As much as possible guidelines shall be provided by the instructor but it should be the determination of the student teacher that he/she has exhausted his own capacities before calling for help or seeking clarification. To the student teacher, the specific aim is to help you extend your skills of data handling and develop your understanding, your own thinking and your communication skills.

Course Title	**General Biology Practical I**			
Course Code	**EBS 114P**	**Level 100**	**Credit Value 2**	**Semester 1**
Pre-requisites	**SHS/WASSCE BIOLOGY**			
Course Delivery Modes	**Pre-lab**	**Practical activity**	**Co-operative learning**	**E-learning**
Course description for significant learning	This course is designed to consolidate and upgrade the practical skills of students. It comprises practical work related to the different aspects of the biology course in the current science curriculum to sharpen the student-teacher's skills of observation, experimentation and analysis. NCTEF, NTS 1a-d, 2b-f, 3a-d			
Course learning outcomes	**On successful completion of the course student teachers will be able to:**		**Indicators**	
	CLO 1: Minimize the use of living things to conserve natural resources		1.1 Use the least number of organisms to do practicals 1.2 Student-teachers collect their own specimens	

	NTECF, NTS 2a, 2b, 3d, 3f p14-15			
	CLO 2: Develop compound microscopy skills NTECF, NTS 2a, 3b, 3c p15			2.1 Prepare biological materials 2.2 Focus on low power and high power and make labelled drawings from both
	CLO 3: Discover the process by which organisms may be classified NTECF NTS 2c, 3d, 3k p14			3.1 Narrate the history of classification 3.2 Itemize the various stages involved in classification
	CLO 4: Construct dichotomous key for a small group of organisms NTECF NTS 2c, 3i, 3k p14-15			4.1 Use dichotomous key to group plants on campus 4.2 use dichotomous key to group animals on campus
	CLO 5: Familiarize with the appearance and microscopic structure of spinal cord NTECF, NTS 3d, 3j p15			4.3 Labelled drawing of the TS of spinal cord
	CLO 6: To find the concentration of auxin NTECF NTS 2a, 3a, 3b, 3f			6.1 Able to measure the maximum concentration that generates maximum growth response
	CLO 7: Comparison of the strengthening tissue in young and old stems NTECF, NTS 2a-f 15			7.1 Drawing of the T.S of stem 7.2 Drawing of the T.S. of root
	CLO 8: Observe the life-cycle of a platyhelminth parasites NTECF, 2a-d, 3e-g			8.1 Discussion of the vectors and their importance
	Units	Topics:	Sub-topics (if any):	Teaching and learning activities to achieve learning outcomes:
	1	Safety in the laboratory	Hazards in the laboratory Causing harm Evaluation of risk	Identification and listing all the potential hazards in the laboratory Matching potential harm with control measure Explaining and identifying and flagging potential hazards with their icons
	2	Levels of organization in biology	Introduction to microscopy	Manipulating the microscope for focusing and naming all the parts of the compound microscope in low power and high power

			Examination of biological materials Examination of plant and animal cells	Prepare biological materials for examination
	3	Classification of organisms for beginners	Basis of classification of organisms Nomenclature in practice The hierarchical system Plants and animals	Explaining the basic unit of classification as the species Mention the scientific names of all organisms encountered on walk around campus Recognition of the five Kingdoms of organisms putting into writing all the taxa for at least five organisms being plants and animals Able to use identification keys to recognize plants and animals
	4	Vegetative structure of flowering plants	Structure of the root Structure of the stem Structure of the leaf	Illustrating full structure of plant Drawing the TS of the stem The illustrating of various shapes of leaves especially monocots and dicots
	5	Practice of dissection of a mammal	Investigating anatomy and morphology Physiological preparations Assessing reproductive status	Draw and label the parts of the mammal Be able to carry out enzymatic test with parts of the alimentary canal Identify whether specimen dissected is male/female, gravid or not.
	6	Osmoregulation and excretion	Investigation of the anatomical features in leaves of grasses from	Ability to distinguish among hydrophytes, halophytes and xerophytes

			different habitats Water loss by woodlice	 Use different relative humidity to distinguish how woodlice respond differently to woodlice
	7	The responding organism	Studying insect life-cycles Early development of toad's eggs	Able to compare life cycle of homometabolous and hemimetabolous insects Identification of the various stages of toad's eggs
	8	Growth and development	Differences between hypogeal and epigeal germination The region of plant cell growth at the stem apex Comparing the structures of young and old stems	Tabulate differences between maize germination and bean germination Drawing of the stem apex in the microscope Drawing sections of old stem and young stem
	9	Response and co-ordination in animals	Histology of nervous tissue Brain structure in mammals Sensitivity to skin	Draw different types of neurons Co-operative learning to pull together ideas Able to demonstrate various parts of skin to various senses
	10	Response and co-ordination in plants	Auxin and the growth of plant organs Indoleacetic acid and leaf abscission Investigating phototropism	Able to use potted plants to identify auxins Illustrate coleoptile length
	11	Health and disease	Flatworm parasites of importance to humans	Drawings of prepared slides

			Susceptibility to common cold	Mini-project to illustrate how one can succumb to common cold
Course Assessment (Educative assessment: of, for and as learning)		**Component 1:** Formative assessment on the individual and group presentation Summary of Assessment Method: Individual and group presentations on cells, classification, nutrition and diseases (Core skills to be developed: Internet search, diversity of life, communicative skills and problem solving) Weighting: 30% Assesses learning outcomes: CLO 1-3 Quiz 1: 15% to be compiled from questions submitted by Tutors. Class assignment(s), individual presentations, group presentations, etc: 15% **Component 2:** Formative assessment (Quizzes and Lab Reports) Summary of Assessment Method: One quiz on physiology of plants and animals (Core skills to be developed: Observation, creativity and critical thinking Weighting: 30% Assesses learning outcomes: ALL Quiz 2: 15% to be compiled from questions submitted by Tutors. Class assignment(s), individual presentations, group presentations, etc: 15% **Component 3:** Summative assessment Summary of Assessment Method: End of semester examination on all units (Core skills to be developed: critical thinking, personal development, problem solving) Weighting: 40% Assesses Learning Outcomes: All		
Required references	Brown, C. R. (1995). The Effective Teacher Series. The effective teaching of biology. London Longman Clegg, C. J. & Mackean, D. G. (1996) Advanced biology principles and applications study guide. London, John Murray Ghana Education Service (2004) Integrated Science I for UTTDBE programme by distance. Course FDC 114 Accra, Teacher Education Division Jones, R., Reed, R. and Weyers, J. (2007) *Practical Skills in Biology*. (4th Ed.) Essex, Pearson Education Ltd Mader, S. S. (2001) *Biology*. New York, The McGraw-Hill Companies Inc.			

	Millar, R., Marechai, J. F. & Triberghien, A. (1999). "Mapping" the domain: varieties of practical work. In: J. Leach: A. Paulsen (Ed) Practical work in science education: recent research studies. Rockilde, Rockskilde Univ Press Nyavor, C. B. & Seddoh, S. (2000). *Biology for senior secondary Schools* (2nd Ed) London & Basingtoke, Unimax Macmillan Ed. Ltd.
NB: It was pointed out that you may add information about the lecturer such as the telephone number and email address. You may also incude the venue(s) for the sessions where the interaction with the student teachers may occur. **You may also have to include two additional columns i.e. Pre-Lecture Preparation and Post-Lecture Preparation where the student comes before, during and after lecture PREPARED.**	

ALGEBRA II

CONTEXT

The mathematics curriculum provides student teachers with a background in the theory and application of the content needed to understand the underlying structure and nature of mathematics. In addition, it exposes student teachers to the content knowledge needed in preparing them sufficiently to teach mathematics beyond what they will be expected to teach at the basic education level. The demands of rapid change in an information- based society today have influenced mathematics programs in various ways. The skills needed for jobs require thoughtful workers who are oriented to problem solving, irrespective of their gender, cultural and socio-economic backgrounds. By studying mathematics, students are taught to reason, to analyse, to think for themselves, while it imparts confidence in their own reasoning powers, and strengthens their mental faculties. Students need to use rules and thought processes of mathematics along with facts, to develop a reasoning pattern that will translate to their everyday lives, making them better thinkers and problem solvers. It is important for students to view mathematics as a significant part of our culture, not only for its valuable scientific applications but also for its enrichment of our cultural life. This mathematics curriculum is, therefore, intended to equip student teachers with the knowledge, skills and values needed to teach mathematics to basic school pupils in everyday life context. Besides, it provides the requisite resource material for preparing student teachers to teach mathematics sufficiently and effectively in our basic schools.

COURSE TITLE	**ALGEBRA II**						
Course Code	**EBS 102**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**1**
Pre-requisite	**Students have knowledge of basic algebra in SHS core Mathematics**						
Course Delivery Modes	**Face - to - face** [1] ✓	**Practical Activity** [2] ✓	**Work-Based Learning** [3] ✓	**Seminars** [4]	**Independent Study** [5] ✓	**e-learning opportunities** [6] ✓	**Practicum** [7] ✓
Course Description for significant learning (indicate NTS, NTECF, BSC	This course is designed to deepen and build on students' understanding of basic algebra covered at the senior high school level. The course will expose students to the following: Set theory, Binary operations involving surds and rationalization, Algebraic Equations and Inequalities (linear and quadratic) including linear programming, Linear and Exponential sequences, Polynomials and Rational Functions, Exponential						

GLE to be addressed)	and Logarithmic equations including change of base, application of Linear and Exponential sequences, Binomial expansion involving positive integral powers, and Matrices (up to 3X3 Matrices). Emphasis will be made on the practical applications of these topics through the use of word problems and semester projects. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity. (NTS 1a, 1b, 2c; NTECF Pillar 1, (p. 21), P. 39, P.45).			
Course Learning Outcomes [8]: including INDICATORS for each learning outcome	**Outcomes** By the end of the course, the student will be able to:			**Indicators**
	1. demonstrate a sound knowledge of mathematical concepts and procedures in the content areas studied (NTS 2c, NTECF Pillar 1, (p. 21)			• Show relational understanding of specific topics learnt in the course
	2. make connection between the course content and other disciplines and activities in daily life. (NTS 2c, NTECF Pillar 1, (p. 21)			• Apply knowledge of specific topics learnt in the course to real life situations and other disciplines
	3. solve problems in the content area studied using appropriate procedures. (NTS 2c, NTECF Pillar 1, (p. 21)			• Solve related problems on the topics studied.
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	Set theory	Operation on sets: De-Morgan's identities, complement of a set, and solving two and three-set problems Difference between two sets. E.g. $A - B = A \cap B^1$ (reference to the union of A and B).	Involve students in activities leading to the development of De-Morgan's laws Encourage students to verify the laws using specific examples Create suitable experiences for students to establish the relation $A - B = A \cap B^1$
	2	Polynomials and Rational functions	Evaluating polynomials and rational functions, Remainder and factor theorems, Roots of polynomial functions	Create contexts for polynomial functions and rational functions for students to get in-depth knowledge of the content Engage students in evaluating given

				polynomials and rational functions Provide worthwhile opportunities for students to apply the remainder and factor theorems
	3	Binary operations involving surds and rationalization	Properties of binary operations i.e. closure, commutative, associative and distributive. Finding identity elements and inverses Evaluating binary operations involving surds (include rationalisation of surds).	Provide opportunities for students to verify the properties of binary operations involving rational numbers and rationalization of surds
	4	Application of Algebraic Equations and Inequalities including linear programming	Solving quadratic equations by factorization, and by use of quadratic formula. Solving word problems on equations and inequalities including linear programming	Create practical and real life situations that involve application of equations and inequalities The use relevant ICT software is encouraged e.g graphical calculator and computer
	5	Linear and Exponential sequences	Linear sequences, Exponential sequences, The general term of linear and exponential sequences, Sum of first *n*-terms of linear and exponential sequences	Provide relevant situations leading to: - generating linear sequences (e.g. simple interest) and exponential sequences, e.g., population growth; - finding the nth term of given sequences - sum of first *n* terms of given sequences
	6	Exponential and Logarithmic equations including change of base,	Solving equations involving indices e.g. $9^x+3^{x+1}-4=0$ Solving equations involving logarithms including change of base. e.g. $\log_a x+2\log_x a=-1$	Revise the laws of indices and logarithms with students Provide relevant contextual tasks for students to work on in groups and as individuals
	7	Binomial expansion	Binomial expansion involving	Expose students to the Pascal triangles

		involving positive integral exponents	positive integral powers up to the 6^{th} power and its application.	Provide opportunities to students to use the Pascal triangle to expand given binomials Expose students application of binomial expansion to estimate given powers e.g., 0.98^5
	8	Matrices (up to 3X3 Matrices).	Operations on 2×2 and 3×3 matrices- adding, subtraction and scalar multiplication; Finding determinants and inverses of 2 by 2 matrices Application of matrices to solving simultaneous linear equations involving 2 variables.	Creating contexts for matrices and operations on matrices e.g., Football League tables Involve students in various activities to solve real life tasks on operations on matrices Engage students in finding determinants and inverses of 2 by 2 matrices and apply this in solving simultaneous equations.
Course Assessment Components[9] : (Educative assessment of, for and as learning)	**Component 1: Formative Assessment (Individual and Group presentations)** **Summary of Assessment Method:** Critical Thinking, problem solving skills, creative and innovative skills, life-long learning/ personal skills, collaborative/ social skills, communication skills, literacy and numeracy skills, leadership skills, digital literacy/ICT skills (NTECF p. 45**)** • Presentations Weighting (10%) Assesses Learning Outcomes: CLO 1 (Units 1, 4 and 8)			
	Component 2: Formative Assessment **Summary of Assessment Method:** Critical Thinking, problem solving skills, creative and innovative skills (NTECF p. 45**)** • Assignments • Class exercises • Quizzes Weighting (30%) Assesses Learning Outcomes: CLO 1, 2 & 3 (Units 1, 2, 3, 4, 5 and 6)			
	Component 3: Summative Assessment **Summary of Assessment Method:** End of Semester Examinations Unit 1 – 8 (Core skills to be developed: Critical Thinking, problem solving skills, creative and innovative skills (NTECF p. 45**))**			

	Weighting (60%) Assesses Learning Outcomes: CLO 1, 2 & 3 (Units 1 - 8)
Instructional Resources	Algebra tiles, Geoboard/geodot, ICT tools including calculators and computers
Required Text (core)	Martin, J. L. (1994) *Mathematics for teacher training in Ghana- students' activities and tutor's notes.* Accra: Unimax Macmillan Ltd.
Additional Reading Lists	Asare-Inkoom, A. (2012). *Further/elective Mathematics for Senior Secondary Schools (Vol.1)*. Cape Coast, Hampton Printing Press. Backhouse, J. K., & Houldsworth, S. P. T. (1985). *Pure mathematics 1*. England: Pearson. Barnett, R. A., Ziegler, M. R., & Byleen, K. E. (2008). *College Algebra with Trigonometry*. New York, McGraw-Hill. Backhouse, J. K. & Houldsworth, S.P.T (2005). *Pure Mathematics 1*. London, Longman. Larson, R. E., Kanold, D. T., & Stiff, L. (1993). *Intermediate algebra*. Canada: D. C. Heath and Company. Ofosu, J. B. (2001). *A comprehensive SSS course in elective Mathematics*. Accra: Afram Publication. Swokowski, E. W. & Cole, J. A. (2005). *Precalculus: Functions and Graphs (10th ed.)*. Canada, Thomson Brooks/Cole. Turner, L. K., & Knighton, D. K. (1986). *Advanced algebra 1* (2nd ed.). England: Longman.

LINGUISTICS OF THE GHANAIAN LANGUAGE

CONTEXT

EBS 120 Linguistics of the Ghanaian Language

Every language has its alphabet which consists of a number of letters. These letters of the alphabet represent the sounds of the language in writing. When one speaks what comes out are sounds, and it is these sounds that are combined to represent the words we use in our language. To start with we will be looking at the rules and principles governing the writing of our various Ghanaian Languages. This course therefore seeks to equip the student teacher with the requisite knowledge and skills in applying the principles and rules for the writing, grammar and the syntactic structures of a Ghanaian Language.

Course Title	**Linguistics of the Ghanaian Language**						
Course Code	**EBS 120**	**Course Level 100**	**Credit value 2**	**Year One Semester One**			
Pre-requisite	**N/A**						
Course Delivery Modes	**Face-to-face** √	**Practical Activity** √	**Work-based learning** √	**Seminars** √	**Independent Study** √	**e-learning opportunities** √	**Practicum**
Course Description	This course will cover the study of the basic grammatical and phonological units in the Ghanaian Language such as the lexical categories, the phrase, the clause, phonemes, tones, morphemes and examine the structures and functions of these units. The course is designed to meet the following NTS, NTECF, BSC, GLE expectations and requirements: (NTS 1a, b: 12), (NTS 2c: 13), (NTS 2e: 13), (NTS 2f: 13), (NTS 3e: 14), NTS 3j: 14).						
Course learning outcome including INDICATORS for each learning	On successful completion of the course, the student teacher will be able to:						
	Outcomes			**Indicators**			

	CLO1 Identify the phonemes in the languages (NTS 2c:13), (NTS 2e: 13), (NTS 3e:14), **CLO2** Identify basic phonological processes in the languages(NTS 2c: 13), (NTS 2e: 13), (NTS 3c:14) **CLO3** Distinguish between bound and free morphemes, inflectional / derivational, morphemes and allomorphs (NTS 3j:14), NTS 1d:12), NTS 2d:13), NTS 3e:14), **CLO4** Enable them write grammatical and acceptable sentences in the languages; handle basic grammatical structures and nuances. (NTS 2b:13), (NTS 2f:13)	• Explain the significance of their culture • Compare and contrast knowledge of their customs and that of other people • Explain the relationship between language and culture. • Communicate very well with the acquired/learned terminologies

Course content	**Units:**	**Topics:**	**Sub-topics:**	**Suggested Teaching Learning Activities**
		Syntax	1. Word classes • Nouns • Verbs • Adverbs etc... 2. Phrases: types and functions • Nominals • Adjectival • Adverbial etc... 3. Clauses • Independent (types and functions) • Dependent (types	1. Student teachers reflect on their previous knowledge on lexical categories 2. Introduce and discuss the word classes/lexical categories with class. 3. Use discussion to explain the various categories of the lexical items.

		Phonology Morphology	and functions) 4. Sentences • Basic • Combined • Coordination • Subordination • What Phonology is • Phonemes • Phones • Allophones • What Morphology is • Morphs • Morphemes • Allomorphs	4. Individual/group presentations of assigned task on the lexical categories 5. Class discussion on types of Phrases 6. Class brainstorming on types and functions of sentences 7. Use discussion to explain what phonology is. 8. Class brainstorm on phonemes, phones, allophones. 9. Discussion on the concept of morphology. 10. Individual/group presentations of assigned task on phonology and morphology
Course Assessment Component	**Component 1:** Formative Assessment (Quizzes) Summary of Assessment Method Quizzes: Class assessment would be based on quizzes. There would be two quizzes for the semester. Weighting 10%. Assesses learning outcome: CLO 1			

	Component 2: Formative Assessment (Individual assignments and group presentations) Summary of Assessment Method Class Participation: Students must attend all lectures and must be punctual too. They are supposed to participate actively in class discussions and assignments. Assessment will be based on class presentations and assignments. Weighting 10% Total 20% Assess learning outcomes: CLO 1 and 2
	Component 3: Summative assessment (End of Semester Examinations) Summary of Assessment methods: An end of semester that encapsulates course learning outcomes (CLOs) 1 – 4, and make use a combination of the formative assessment methods in component one and two. Demonstration: problem solving, critical thinking and feedback. Weighting 60% Assesses learning outcomes: CLO 1,2,3 and 4
Instructional Resources	1. Internet resources 2. Laptops 3. Books
Required Text (Core)	Ameka F. K.& Dakubu, M.E.K. (2008). *Aspect and Modality in Kwa*, John Benjamins Publishing Co. Downing, A. and Locke, P. (2006). *English Grammar: A University Course:* 2nd edition. London: Routledge Publishers Givon, T. (2001). *Syntax. 2 Volumes*, Amsterdam: Benjamins. Rijkhoff, J. (2002) *The Noun Phrase*, Oxford: Oxford University Press. Raimy, E. (2000). *The Phonology and Morphology of rReduplication. Studies in Generative*. New York: Mouton de Gruyter Sobin, N. (2011). *Syntactic Analysis: The Basics*. West Sussex: Wiley Blackwell Thakur, D. (1997). *Linguistic Simplified. (Morphology*). Bharati Bhawan Publication & Distribution. New Delhi
Additional Reading List	Agyekum, K. (2010) *Akan Kasa Nhyehyɛeɛ*. Accra: Dwumfour. Ghana Ltd Andoh-Kumi, K. (1995). *Basic Akan Grammar,* Accra: Typed Co Ltd Boadi, L. A. (2002). *Tense, Aspect and Mood in Akan*. In F. K. Ameka amd E.M.K Dakubu (Eds) 9-68 Boadi, L.A. (2006). *The Participle in Akan. Studies in Languages of the Volta Basin*. Dakubu,

	Akanlig-Pare, Osama ns Saah (eds) 4, 36-51 Bodomo, A.B. (2000). *Dagaare.* Muenchem: Lincom Europa. Nyomi, C.K. (1977). *The Study of Ewe Word Structure and Usage for Beginners*. Cape Coast: University of Cape Coast

INTRODUCTION TO SOCIAL STUDIES

CONTEXT

This programme is developed to train teachers who could teach students to appreciate and solve the emerging environmental and social issues that negatively affect our communities. These issues are grounded within the social, economic and political spheres. Many of these issues are as a result of certain misconception and attitudes that negatively affect our communities. This programme is, therefore, design to equip teacher-trainees with the appropriate knowledge, skills and values to enable them to assist learners to live well as responsible citizens who have adequate knowledge on the social, economic and political issues in Ghana.

<table>
<tr><td>Course Title</td><td colspan="7">Introduction to Social Studies</td></tr>
<tr><td>Course Code</td><td>EBS 157</td><td>Course Level:</td><td>100</td><td>Credit Value:</td><td>3</td><td>Semester</td><td>1</td></tr>
<tr><td>Pre-requisite</td><td colspan="7">Student teachers have knowledge in social studies at the senior high school level.</td></tr>
<tr><td>Course Delivery Modes</td><td>Face -to -face [1]</td><td>Practical Activity [2]</td><td colspan="2">Work-Based Learning [3]</td><td>Seminars [4]</td><td>Independent Study [5]</td><td>e-learning opportunities [6]</td><td>Practicum [7]</td></tr>
<tr><td>Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)</td><td colspan="7">This course is designed to introduce prospective social studies teachers to the content, nature, scope, and philosophical underpinnings as well as controversial issues in the area of study. It is anticipated that this course will equip the professional development of prospective social studies teachers regarding their roles in the social studies classroom. It sheds light on the tenets of current affairs in teaching social studies. The major goal for teaching social studies justified and dealt with in this course are the content, the nature and the scope, as well as critical thinking skills in social studies will be emphasized (NTECF, NTS).</td></tr>
<tr><td rowspan="5">Course Learning Outcomes [8]: including INDICATORS for each learning outcome</td><td colspan="4">Outcomes:
By the end of the course, the student should be able to:</td><td colspan="3">Indicators:</td></tr>
<tr><td colspan="4">1) explain the concept “social studies”</td><td colspan="3">1) Explain the concept “social studies”</td></tr>
<tr><td colspan="4">2) explain the objective, scope and nature of social studies</td><td colspan="3">2) Explain the objective, scope, and nature of social studies</td></tr>
<tr><td colspan="4">3) Employ current affairs in the teaching of social studies</td><td colspan="3">3) Employ current affairs in the teaching of social studies</td></tr>
<tr><td colspan="4">4) Examine the role of the teacher in the teaching and learning of social studies</td><td colspan="3">4) Examine the roles teachers and students play in the teaching of social studies</td></tr>
</table>

	5) Discuss the role students play in the teaching and learning of social studies			
	6) Apply **critical** thinking skills			
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1.	THE NATURE OF SOCIAL STUDIES	1. Meaning, scope & goals of social studies 2. Geography in social studies 3. Economics in social studies 4. The place of history in social studies 5. Sociology in social studies 6. Anthropology and social studies	1. Put students in small groups to discuss the meaning , scope, and goals of Social Studies 2. Guide students through questions and answers to come out with the foundation subjects of social studies
	2.	**THE CONCEPT OF INTEGRATION IN SOCIAL STUDIES**	1. The meaning of integration in social studies 2. Types of integration 3. Pedagogical implication of integration in social studies 4. Organizing units and lesson in an integrated way 5. Advantages of integration in social studies	1. Guide students through the use of concrete, stone, sand and cement the concept of integration 2. Discuss with students the importance of integration through drawing ideas from different subject areas

			Problems of integration in social studies	
	3.	**CURRENT AFFAIRS AND CONTROVERSIAL ISSUES IN SOCIAL STUDIES**	1. Meaning of current affairs Objectives in teaching current affairs 2. Techniques in teaching current affairs. 3. The concept of controversial issues 4. Approaches to the teaching of controversial issues. 5. Resources for the teaching of social studies	1. Organise students into groups to gather information the current affairs journals, newspapers Daily graphic etc 2. Demonstrate with students through discussions to teach them the techniques of using current affairs
	4.	**THE ROLE OF THE TEACHER IN TEACHING AND LEARNING OF SOCIAL STUDIES**	1. Qualities of the social studies teacher 2. The role of the social studies teacher 3. Educational values of the role of the teacher 4. Ensuring effective teaching of social studies 5. Essential skills in social studies Teaching essential skills in social studies	1. Discuss with students the qualities of a good social studies teacher. 2. Through dramatization guide students to exhibit the role of a social studies teacher. 3. Discuss with students the educational values they will gain if they follow the values of the social studies teacher. 4. Guide students through the use of discussion and question and answers to direct them to teach social studies in appropriate manner. 5. Put students in groups to assign them responsibility in terms of drawing manipulating and leading colleagues students to get the right skills in social studies.
	5.	**THE ROLE OF THE PUPIL IN**	1. The role of social studies learner.	1. Discuss the qualities of a good social studies teacher.

		THE TEACHING AND LEARNING OF SOCIAL STUDIES	2. Using community resources. 3. The need for social studies room. 4. Developing critical thinking in learning. 5. The learner and the social studies museum	2. Use to exhibit the role of a social studies teacher. 3. Guide students to create a place that is homely to gather social studies materials for effective teaching and learning. 4. Guide students through the use of discussion and question and answers to train them to think critically. 5. Guide students to create a place that is uniquely meant for the teaching and learning of social studies.
	6.	**IMPORTANCE OF SOCIAL STUDIES**	1. Concept of citizenship education 2. Goals of citizenship education 3. Approaches of citizenship education 4. Developing the affective domain Developing the psychomotor domain	1. Put students into small groups to discuss the meaning goals and the approaches to teaching citizenship education. 2. Guide students through question and answers to use their knowledge attitude and skills to develop holistic personality.
Course Assessment Components[9] : (Educative assessment of, for and as learning)	**Component 1**: Formative assessment Summary of Assessment Method: Quizzes and assignment Weighting: 20% Assesses Learning Outcomes: CLO 1, 2 and 3 (units 1 - 3)			
Component 2	**Component 2**: Formative assessment Summary of Assessment Method: Quizzes and assignment Weighting: 20%			

	Assesses Learning Outcomes: CLO 4, 5 and 6 (units 4 - 6)
Component 3	**Component 3**: Summative assessment Summary of Assessment Method: End of semester examination Weighting: 60% Assesses Learning Outcomes: CLO 1, 2, 3,4, 5 and 6 (units 1 - 6)
Instructional Resources	Textbook, Video clip, TV set, computer, resource person
Required Text (core)	Tamakloe. E. K. (Ed.). (1994). *Issues in social studies education.* Accra: Black Mask.
Additional Reading List [10]	Kankam, B. (2004). Tutors perception on the social studies subject in teaching training colleges in Ghana. *Journal of Education and Teaching,* 1 (3), 73-83. Kankam, B., & Kendie, S. B. (2005). Ghanaian teacher trainees' perception of the official social studies curriculum and the resources available for its implementation. *GEMTAJ,* 6, 43-53. Ravitch, D. (2003). A brief history of social studies. In J. Leming, L. Ellington & k. porter Magee (Ed.), *Where Did Social Studies Go Wrong?* (pp. 1-5). Washington DC: Thomas Fordham Institute. Saxe, D. W. (1991). *Social Studies in Schools: A history of the early years.* New York: State University of New York Press.

YEAR ONE **SEMESTER TWO**

GEOMETRY & TRIGONOMETRY

CONTEXT

The mathematics curriculum provides student teachers with a background in the theory and application of the content needed to understand the underlying structure and nature of mathematics. In addition, it exposes student teachers to the content knowledge needed in preparing them sufficiently to teach mathematics beyond what they will be expected to teach at the basic education level. The demands of rapid change in an information- based society today have influenced mathematics programs in various ways. The skills needed for jobs require thoughtful workers who are oriented to problem solving, irrespective of their gender, cultural and socio-economic backgrounds. By studying mathematics, students are taught to reason, to analyse, to think for themselves, while it imparts confidence in their own reasoning powers, and strengthens their mental faculties. Students need to use rules and thought processes of mathematics along with facts, to develop a reasoning pattern that will translate to their everyday lives, making them better thinkers and problem solvers. It is important for students to view mathematics as a significant part of our culture, not only for its valuable scientific applications but also for its enrichment of our cultural life. This mathematics curriculum is, therefore, intended to equip student teachers with the knowledge, skills and values needed to teach mathematics to basic school pupils in everyday life context. Besides, it provides the requisite resource material for preparing student teachers to teach mathematics sufficiently and effectively in our basic schools.

Course Title	**GEOMETRY & TRIGONOMETRY**						
Course Code	**EBS 143**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**2**
Pre-requisite	Students have knowledge of basic Geometry and trigonometry in SHS core Mathematics						
Course Delivery Modes	**Face -to -face [1]** ✓	**Practical Activity [2]** ✓	**Work-Based Learning [3]** ✓	**Seminars [4]**	**Independent Study [5]** ✓	**e-learning opportunities [6]** ✓	**Practicum [7]** ✓
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	The course is designed to consolidate and build on students' concepts and skills in Geometry and Trigonometry covered at the senior high school level. The course covers Polygons, Geometrical constructions, Circles theorems, Application of Pythagoras' Theorem to Measurement of 2-D and 3-D Shapes, Coordinate geometry including application of the distance formula, division of line segment in a given ratio, equation of a straight line and a circle, Trigonometric functions including drawing graphs and solving simple trigonometric equations, Movement geometry, Vectors. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and						

	inclusivity. (NTECF, NTS 1a, 1b, 2c;, (p. 21), P. 39, P.45).			
Course Learning Outcomes [8]: including INDICATORS for each learning outcome	**Outcomes:** By the end of the course, the student will be able to:			**Indicators:**
	1. demonstrate an in-depth understanding of the concepts and skills related to Geometry and Trigonometry covered in the course (NTS 1a, 2c)			Exhibit evidence of clear understanding of geometric figures and how to use appropriate instruments to construct real life shapes (2-and 3-dimensional). Explain the nature of the graphs of basic trigonometric functions for angles between 0° and $360°$ Reflect, translate, rotate and enlarge given plane figures with given conditions including the use of relevant ICT tools e.g. graphic calculators and computers
	2. apply the knowledge acquired in the course to solve real life problems, using appropriate procedures and ICT tools such as calculators. (NTS 2c, NTECF Pillar 1 expectation 3, pages 20 and 21)			Show ability to apply the concepts to solve real life problems Exhibit competence in the use of ICT tools as aid to solve problems related to geometry and trigonometry.
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	Polygons	Properties of polygons, interior and exterior angles of polygons. Use of **Geogebra** is expected.	Engage students in practical activities using geogebra and any relevant ICT tool to identify polygons with their properties and apply the knowledge to solve related problems.
	2	Geometrical constructions	Construction of polygons - triangles, quadrilaterals and regular hexagons using a pair of compasses and a ruler only. Construction of lines and angles, bisectors. Use of **Geogebra** is expected.	Involve students in activities involving the use of mathematical construction instruments to construct various angles, polygons and loci. Provide worthwhile real life tasks for students to apply knowledge of construction to solve.
	3	Circles	Properties of a circle -	Involve students in practical activities to establish the

		theorems	radius, diameter, circumference, arcs, segments, chords and properties of chords. Theorems on chords, segments and tangent. Use of **Geogebra** is expected.	relationships between circumference and diameter of a circle and circle theorems. Encourage group work and the use of appropriate TLMs. Provide worthwhile real life tasks for students to apply knowledge of circle theorems to solve.
	4	Application of Pythagoras theorem to Measurement of 2-D and 3-D Shapes	Development the concept of Pythagoras Theorem. Application of Pythagoras Theorem. Use of **Geogebra** is expected. Solving real life problems involving two-dimensional shapes, areas of sectors and arc lengths.	Use geoboard or geodot/graph sheets to develop the concept of Pythagoras theorem and apply the theorem to solve related problems in two- and three-dimensional shapes Engage students in making three-dimensional shapes from their nets
	5	Co-ordinate geometry	Distance between two points, midpoint of a line segment, length of a line segment, slopes (gradient) of lines, equation of a straight line: joining two points; parallel and perpendicular to a given line through a given point; and bisector of a given line segment, division of line segment (internally) in a given ratio, equation of a circle. Use of **Geogebra** is expected.	Engage students collaboratively in activities leading to the derivation of relevant coordinate geometry formulae e.g. formula for finding distance between two given points, formula for dividing a line segment in a given ratio Engage students in exploring conditions for parallel and perpendicular lines Provide relevant opportunities for students to derive the equation of a circle in the various forms: e.g. $x^2 + y^2 = r^2$, $(x-a)^2 + (y-b)^2 = r^2$ Cooperative learning groups to be encouraged. Use of **Geogebra** is expected

	6	Trigonometric functions including drawing graphs and solving simple trigonometric equations	Definition of basic trigonometric ratios, Simple trigonometric identities (e.g. $\cos^2 x + \sin^2 x = 1$), graphs of simple trigonometric functions ($a\cos x$, $a\sin x$, $\tan x$), Solving simple trigonometric equations of the form $a\cos x = b$	Engage students in practical activities using cut-out right-angled triangles leading to the trigonometric ratios. Provide opportunities for students to explore the relationships among the trigonometric ratios. Involve students in drawing the graphs of simple trigonometric functions. The use relevant ICT tool is encouraged. Provide relevant problems on trigonometric equations for students to solve
	7	Vectors and Movement geometry	Scalar quantities, vector quantities, operations on vectors (addition, subtraction, scalar multiplication), magnitude of a vector, parallel and perpendicular vectors, Transformation – translation, reflection, rotation, and enlargement.	Provide real situations to help students to distinguish scalar and vector quantities. Discuss the various forms of representing vectors – column/component form, magnitude and direction form. Engage students in exploring conditions for parallel and perpendicular vectors Use practical activities to introduce addition, subtraction and scalar multiplication of vectors Involve students in activities (like use of graph sheets, ICT tools) leading to the derivation of rules for reflection, translation, rotation and enlargement.
Course Assessment Components[9] : (Educative assessment of, for and as learning)	**Component 1: Formative Assessment (Individual and Group presentations)** **Summary of Assessment Method:** Critical Thinking, problem solving skills, creative and innovative skills, life-long learning/ personal skills, collaborative/ social skills, communication skills, literacy and numeracy skills, leadership skills, digital literacy/ICT skills (NTECF p. 45**)** • Presentations Weighting (10%) Assesses Learning Outcomes: CLO 1 (Units 3, 4 and 6)			

	Component 2: Formative Assessment **Summary of Assessment Method:** Critical Thinking, problem solving skills, creative and innovative skills • Assignments • Class exercises • Quizzes Weighting (30%) Assesses Learning Outcomes: CLO 1 & 2 (Units 1, 2, 3, 5 and 7)
	Component 3: Summative Assessment **Summary of Assessment Method:** End of Semester Examinations Unit 1 – 8 (Core skills to be developed: Critical Thinking, problem solving skills, creative and innovative skills Weighting (60%) • Assesses Learning Outcomes: CLO 1 & 2 (Units 1 – 7)
Instructional Resources	Geoboard/geodot/graph sheets, cut out of various shapes, ICT tools such as *Geogebra* and programmable calculators.
Required Text (core)	Martin, J. L. (1994) *Mathematics for teacher training in Ghana- students' activities and tutor's notes.* Accra: Unimax Macmillan Ltd.
Additional Reading List [10]	Asare-Inkoom, A. (2012). *Further/elective Mathematics for Senior Secondary Schools (Vol.1)*. Cape Coast, Hampton Printing Press. Backhouse, J. K. & Houldsworth, S.P.T (2005). *Pure Mathematics 1*. London, Longman.Larson, R. E., Barnett, R. A., Ziegler, M. R., & Byleen, K. E. (2008). *College Algebra with Trigonometry*. New York, McGraw-Hill. Kanold, D. T., & Stiff, L. (1993). *Intermediate algebra*. Canada: D. C. Heath and Company. Ofosu, J. B. (2001). *A comprehensive SSS course in elective Mathematics*. Accra: Afram Publication. Swokowski, E. W. & Cole, J. A. (2005). *Precalculus: Functions and Graphs (10th ed.)*.Canada, Thomson Brooks/Cole. Turner, L. K., & Knighton, D. K. (1986). *Advanced algebra 1* (2nd ed.). England: Longman

YEAR ONE **SEMESTER TWO**

ENGLISH LANGUAGE STUDIES 1

CONTEXT

The goal of the course is to sustain an unwavering focus on developing knowledge, skills, pedagogy and essential understanding required of a good English teacher to teach English Language and Literature in English from Early Childhood through to the Junior High School in Ghana. The course is to equip the student-teacher with an understanding of contemporary theories, concepts and practices in English Studies and teaching in enhancing literacy. The English courses introduce the student-teacher to the basics of language acquisition skills as well development strategies. The skills: listening, speaking, reading and writing, are given premium throughout the student-teacher's training. These skills are crucial for their academic endeavours, which they will further impart to the Ghanaian child. Though the current teacher training curriculum addresses it, intensifying it comes with numerous advantages to all stakeholders of Ghanaian education. The courses are designed in a manner that the sub-disciplines complement one another. There are ICT components imbedded in the teaching-learning activities to facilitate interactive and learner-focused approach. There is a symbiotic approach in the training of the teachers; as the trainees acquire these skills for personal use and also impart to the students.

The detailed course descriptions and objectives pay attention to the individual courses and attempt to draw synergy from "The National Teacher Education Curriculum Framework" and "National Teachers' Standards for Ghana Guidelines". The assessment portfolios would pay heed to Bloom's Taxonomy of higher level questioning.

Course Title	**English Language Studies 1**						
Course Code	**EBS 135**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**2**
Pre-requisite	Students have been introduced to some word classes and their functions at the senior high school.						
Course Delivery Modes	**Face -to – face X**	**Practical Activity [2]**	**Work-Based Learning [3]**	**Seminars [4]**	**Independent Study X**	**e-learning opportunities X**	**Practicum [7]**
Course	The course is a build-up of the previous EBS 108 that will be taken in the first semester. This English Language Studies 1						

Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	course will help students to learn the concept of rank scale (morpheme, word, etc.) and its grammatical units. It will expose students to the major and minor word classes in English and their functions. Writing will also be discussed with emphasis on good paragraph development and writing of narrative and descriptive essays, as well as expository writings. The course is also designed to develop fluidity of written and oral competencies in students. Students will be expected to read passages and extract meaning from them. This course will further equip the student-teacher with knowledge of the parts of speech as used in context. The students will then use the knowledge acquired in this course in their own essays and in teaching their pupils later on. The mode of delivery will be discussion, group work and individual work. The student-teachers will be assessed through quizzes, project writing, and examination. The course is in line with NTS 1a, b, e, 2b,c,d,3a,e,3i, NTECF bullets 5, 7 and 10; p. 25.	
Course Learning Outcomes [8]: including indicators for each learning outcome	**Outcomes** **By the end of the course, the student will be able to:**	**Indicators**
	1. explain the concept of rank scale and the grammatical units. (NTS 1 b, 2c, 3i).	1.1.discuss what rank in English is. 1.2.Explain what the rank scale is and identify the various ranks. 1.3.Arrange the ranks in order, situating these in context.
	2. identify and describe the open and closed word classes in English. (NTS 1b, 2c).	2.1 discuss the word classes 2.2 describe the two major groups, stating the members that fall within each group. 2.3 discuss each part of speech in context, starting from the major to the minor class.
	3. use punctuation marks in sentences correctly. (1 b, 2c)	3.1 identify punctuation marks in English. 3.2 use punctuation marks in texts
	4. organize and render ideas clearly and coherently (NTS 1 b, 2 c, 3 e)	4.1 rearrange sentences correctly to follow a logical pattern. 4.2 discuss contemporary topics and presents ideas logically in writing, making use of punctuations correctly.
	5. give the narration of an event that has taken place. (NTS 2c)	5.1 discuss the steps of narrating events. 5.2 work in groups to brain storm ideas on a chosen event. 5.3 plan and present a narration of the event.

	6. read a passage and extract relevant information from it. (NTS 2c)			6.1 read a given passage and discuss how meaning could be made from it. 6.2 work in groups on a given passage to determine the meaning of that passage, using skills discussed.
	7. Reflect on observations of English lessons and discuss how the parts of speech were presented to pupils. (NTS 1e, 2b, 3a, e)			7.1.visit basic classrooms to observe grammar lessons on parts of speech, and write a report on the observation. 7.2 reflect on the observation and discuss how best the teaching of grammar could be done.
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	1. Rank scale and Rank shift	1.Definition of rank scale 2.Elements of rank scale – a. morpheme (discuss types: free, bound, inflectional, etc.) b. word, (types of word formation – affixation, inversion, etc.) c. phrase (types of phrases) d. clause e. sentence 3.Definition and functions of rank shift	Let students brainstorm on rank scale Explain what the rank scale is and identify the various ranks. Arrange the ranks in order, situating these in context. Explain rank shift and discuss its functions
		2.Word Classes	What is word class 1.Open word classes – nouns, verbs, adjectives and adverbs 2. Closed word classes a. pronouns, b. prepositions, c. conjunctions (Discussion should cover types, features, functions, etc. of each	Review the concept of parts of speech and link it to word classes Describe the two major groups, stating the members that fall within each group. Discuss each part of speech in context, starting from the major to the minor class. Guide students to identify punctuation marks in sentences.

			word class, especially the open word class.)	Discuss punctuation marks in contexts.
		3.Introduction to writing	1.Punctuation marks: Attention should be on the following punctuation marks: a. capitalization b. full stop c. comma d. question mark e. apostrophe f. exclamation mark g. quotation marks (Discussion should lay emphasis on how the various punctuation marks are used.)	Discuss contemporary topics and presents ideas logically in writing, making use of punctuations correctly. Guide students to discuss the paragraph and the types. Discuss elements of an introductory paragraph Discuss the components of a good mainstream paragraph Discuss cohesion, and unity in the paragraph
		4 The Writing Modes: - Narrative - Descriptive - Expository	2.Paragraph Development a. Definition of paragraph b. Components of a good paragraph: i. Introductory paragraph ii. Topic sentence: identification and importance iii. Supporting sentences iv. Concluding sentence c. Other features of a good paragraph v. Cohesion and coherence (Appropriate use of transitional devices)	Invite some students to narrate familiar events Discuss steps of narrating events. Work in groups to brainstorm on a chosen event. Plan and present a narration of the event. Discuss the structure and features of a descriptive essay Discuss the structure and features of the expository essay Read a given passage and discuss how meaning could be made from it. Work in groups on a given passage to determine the meaning of that passage, using skills discussed.

			vi. Unity vii. Completeness d. Correct spelling, punctuation, etc.	
		5. Reading Comprehension/Textual Analysis	1. Narrative Essay: Elements of good narration, structure, cohesion, etc. 2. Descriptive Essay: features of good descriptive essay: use of colourful words, etc. 3. Expository writing: describing a process 1. Skills for effective comprehension (prediction, forecasting meaning using titles, pictures, topic sentences, etc.) 2. Identify text structure (how sentences are put meaningful together into paragraphs) 3. Skimming, scanning, critical reading skills, etc. 4. Types of comprehension questions: factual, inferential, speculative, appreciative, etc. (Practice exercises should be based on narrative and descriptive text.)	Let students identify and discuss sentence structure and meaning Visit basic classrooms to observe grammar lessons on parts of speech, and write a report on the observation. reflect on the observation and discuss how best the teaching of grammar could be done
Course Assessment Components : (Educative	Component 1: Formative assessment (40%) Summary of assessment methods: Class participation (10%); group presentation on the types of essay (10%); Individual assignments- analysis of a poem (10%); and a quiz – rank scale, rank shift, word class and punctuations (10%) Assessing Learning Outcomes: 1, 2 and 3.			

assessment of, for and as learning)	Component 2: Summative assessment: (60%) End of semester examination on units 1 – 5 to develop core skills such as knowledge application, personal development. The examination will adopt varied approaches; from short answer questions to essay questions. Assessing Learning Outcomes: 1, 2, 3, 4, 5 and 6.
Instructional Resources	Projector and computer and Sampled essays and passages
Required Text (core)	Leech, G. (1989). *English grammar and usage*. London: Edward Arnold. Quirk, Randolph, Greenbaum, Sidney et al. (1985). *A comprehensive grammar of English language*. Essex: Longman.
Additional Reading List	Cobuild, (1990). *English grammar*. London: Harper Collins. Cobuild, (1992). *English usage*. London: Harper Collins. Clouse, B. F. (1997). *Transitions: From reading to writing*. Boston: McGraw-Hills. Crystal, D. (1998). *The Cambridge encyclopaedia of language*. Cambridge: CUP. Johnson, K. (1982). *Communicate in writing*. Essex: Longman. Ploeger, K.M. (1999). *Simplified writing skills*. Illinois: NTC Publishing Group Press. Quirk, R., & Greenbaum, S. (1973). *University grammar of English*. Essex: Pearson Education Limited. Rozakis, L. E. (2003). *Grammar and style*. Indiana: Alpha Books.

GENERAL CHEMISTRY

CONTEXT

Chemistry forms an integral part of our lives. It touches the lives of every individual through agriculture, industry, nutrition, medicine, and home. An understanding of Chemistry is required to address major issues facing humanity. Therefore, the teaching of Chemistry should be done in such a way that students are presented the everyday relevance, or context, up front. This course will expose the student to acquire knowledge, skills and attitudes in topics such as Atomic Structure, Ionic and Covalent Compounds, The Mole, Chemical Formula and Equations, Acids, Bases and Salts, and the Chemistry of Carbon Compounds. In addition, this course will aim to bridge the gap between industrial and academic chemistry. Activity aids such as visits to industries will be encouraged to help students to give meaning to concepts, rules and laws, and activities in the classroom. The course will directly engage students in developing the reading, writing, and critical thinking skills and creativity promoted by the standards. The teaching and learning of Chemistry will be done in such a way that new concepts are presented in real-life (outside the classroom) situations and experiences that are familiar to the students. The examples and student exercises should be presented in the context of their use. These should include many real, believable problem-solving situations that students can recognize as being important to their current or possible future lives. The students should be encouraged to gather and analyze their own data as they are guided in discovery of the important concepts. Therefore, teachers should create opportunities for students to gather and analyze their own data for enrichment and extension. The lessons and activities should encourage the student to apply concepts and information in useful contexts, projecting the student into imagined futures. The students are expected to participate regularly in interactive groups where sharing, communicating, and responding to the important concepts and decision making occur. The lessons, exercises and laboratory work improve students' reading and other communication skills in addition to scientific reasoning and achievement.

Course Title	**General Chemistry**							
Course Code	**EBS 115**	**Course Level**	**100**	**Credit value**	**3**	**Semester**	**2**	
Pre-requisite	Students have acquired knowledge in Senior High School Elective Chemistry							
Course Delivery Modes	✓ **Face-to-face**	**Practical Activity** ✓	**Work-Based Learning** ✓	**Seminars**	**Independent Study** ✓	**e-learning opportunities**	**Practicum**	
Course Description	This chemistry course is designed to consolidate and expand on the content and skills students have							

for significant learning (indicate NTS, NTECF, BSC GLE to be addressed) Course Learning Outcomes: including INDICATORS for Each learning outcome	acquired from their lessons in Integrated Science at the Senior High level. It also reflects some of the topics treated at the basic school level. The topics will be studied at the level that is slightly above that of elective Chemistry at the Senior High School. Topics studied in this course include atomic structure, electronic energy levels, acids basis and salts, and aspects of chemistry of carbon compounds. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity. (NTS 2a, 2b, 2c,2e. 2f, p.13; 3e-3o, p.14; NTECF Pillar 1)

Outcomes	Indicators
The course will enable students to: CLO 1: (a) describe the structure of the atom in terms of protons, neutrons and electrons (NTS 2b, 2c, 2e p. 13, 3h, 3j, p. 14).	a. Describe protons, neutrons and electrons b. Describe the structure of the atom
CLO 2: write the electronic configuration of each of the first twenty elements of the periodic table (NTS 2c, 2e, 2f. p. 13, 3h, 3j, p. 14).	a. Tell the atomic number of the first twenty elements b. Write the electronic configuration of the first twenty elements of the periodic table
CLO 3: explain the difference between covalent and ionic compounds (NTS 2c, 2e, 2f. p. 13, 3h, 3j, p. 14).	a. Use two examples to describe the formation of ionic compounds in term of electron shifts or transfer of electrons. b. Illustrate the formation of ionic compounds c. Discuss the properties of ionic compounds d. Use two examples to describe the formation of covalent compounds in term of electron sharing. e. Illustrate the formation of covalent compounds f. Discuss the properties of covalent compounds g. Differentiate between ionic and covalent compounds

CLO 4: define the mole as a unit of measurement of amount of substance (NTS 2b, 2c, 2e p. 13, 3h, 3j, p. 14).	a. Define the mole as a unit. b. Relate the mole to the amount of substance and number of entities/particles (atom, molecules, ion, electron etc.) c. Use the relative atomic masses of one mole of a given compound to calculate the formula mass (molar mass): carbon dioxide (CO_2), water (H_2O), sodium chloride (NaCl), sugar ($C_{12}H_{22}O_{11}$)
CLO 5: write the formulae of common compounds and a balanced equation for simple reactions (NTS 2c, 2e, 2f. p. 13, 3h, 3j, p. 14).	a. Use the periodic table to illustrate symbols representing their respective elements (e.g. Magnesium-Mg, Aluminium-Al, Sodium-Na, Hydrogen-H etc.) b. Indicate that the symbol represents the atoms of an element. c. Write the formulae of four common compounds d. Outline the steps in writing a chemical equation e. Write a balanced chemical equation for a simple reaction f. Indicate the symbols (g = gas ; l = liquid ; s =solid ; aq. = in water solution) to denote the state of a substance in an equation
CLO 6: separate mixture by distillation, sublimation, chromatography, evaporation and magnetization (NTS 2c, 2e, 2f. p. 13, 3h, 3j, p. 14).	• Describe at least four methods of purification of impure compounds • Separate impure compounds using at least two methods
CLO 7: describe acids, bases and salts (NTS 2b, 2c, 2e p. 13, 3h, 3j, p. 14).	a. Define acids, bases and salts b. Describe the physical properties of acids, bases and salts c. Describe the behaviour of acids and bases in water d. Explain the conductance of molar solutions of strong and weak acids and bases.

CLO 8: classify and name different types of organic compounds (NTS 2c, 2e, 2f. p. 13, 3h, 3j, p. 14).	a. group given organic compounds into alkanes, alkenes, alkynes, alkanols and alkanoic acids b. write the names of given organic compounds
CLO 9: describe the structures of different organic compounds (NTS 2b, 2c, 2e p. 13, 3h, 3j, p. 14).	a. tell the differences in the structures of different organic compounds b. draw the structures of given organic compounds c. describe structural (chain, position and functional group) and geometric isomerism
CLO 10: discuss the chemical and physical properties of organic compounds (NTS 2c, 2e, 2f. p. 13, 3h, 3j, p. 14).	a. describe the chemical and physical properties of organic compounds b. compare the chemical and physical properties of organic compounds
CLO 11: describe the preparation and uses of organic compounds (NTS 2a, 2b, 2c, 2e. 2f, p.13; 3e-3o, p.14)	a. explain the laboratory preparation of three named organic compounds b. describe the uses of three named organic compounds

Course Content	**Units**	Topics	Sub-topics (if any):	Teaching and learning activities to active learning outcomes
1	**STRUCTURE OF THE ATOM AND ARRANGMENT OF ELECTRONS**		a) Gross features of the atom b) Arrangement of electrons in the main and sub-energy levels c) Atomic number, mass number, isotopes and atomic mass	• Use cooperative method (think-pair-share) to discuss and explain the gross features of the atom • Animation and simulations of structure of the atom and how electrons are arranged in the main orbitals • Use games and songs/acronyms to learn about the 1st 20 elements • Class discussion of the following terms: atomic number, number of protons, mass number and atomic mass

2	**FORMATION OF IONIC AND COVALENT COMPOUNDS**	a) Ionic bonds b) Covalent bond	• Using individual and group presentations (being mindful of gender roles) to describe the formation of ionic compounds in term of electron shifts or transfer of electrons with examples • Using individual and group presentations (being mindful of gender roles) to illustrate the formation of ionic compounds • Class discussion on the properties of ionic compounds • Using individual and group presentations (being mindful of gender roles) to describe the formation of covalent compounds in term of electron sharing • Using individual and group presentations (being mindful of gender roles) to illustrate the formation of covalent compounds • Class discussion on the properties of ionic compounds • Student presentation on the differences between ionic and covalent bonds
3	**MOLE AS A UNIT AND FORMULAR MASS**	a) The mole as a unit b) Formula mass	• General class discussion on the mole concept • Student presentation on calculations involving the mole • Questions and answers technique can also be employed where appropriate (being mindful of equity and
4	**CHEMICAL FORMULA AND EQUATION**	a) Chemical Symbols and formula b) Chemical equation c) Balancing equations and state symbols	• Use game and songs/acronyms to learn the symbols and chemical formulae of elements and compounds respectively • Use lecturette method to explain chemical reactions, chemical equations and balancing of chemical equations • Individual and group work on balancing of chemical equations • Student presentation on balancing of chemical equations
5	**PURE AND IMPURE**	a) Pure and impure substances	• Student presentation on the definition of pure and impure compound with examples

	SUBSTANCES AND MIXTURES	b) Methods of purification of impure substances c) Importance of purification of impure substances	• Class discussion on the methods of purification of impure compounds • Student demonstration of at least two methods of purification of impure substances • Class discussion of the importance of purification of impure compounds • Visit to industrial sites to interact with workers, observe and discuss the application of purification of impure substances • Students present a report on the industrial visit for a general class discussion
6	**ACIDS, BASES AND SALTS**	a) Definition of acids and bases b) Physical and chemical properties of acids and bases c) Acids, bases and salts as electrolytes d) pH e) Weak acids and weak bases f) Hydrolysis g) Acid-Base indicators h) Acid-base titrations	• Using concept mapping and cartooning for illustrating and discussing the concepts of acids, bases and salts. • Using individual and group presentations • Using 'spider web' as a strategy to present the classification of acids and bases. • Videos, computer simulations and whole class discussion can be used for presenting the concept on pH scale and titration. • Visit to industrial sites to interact with workers, observe and discuss the application of acids, bases and salts • Students present a report on the industrial visit for a general class discussion

7	**CHEMISTRY OF CARBON COMPOUNDS**	a. Classification and nomenclature of alkanes, alkenes and alkynes	• Using cooperative learning (think-pair-share) let students discus the classification of hydrocarbons and explain the basic rules for naming hydrocarbons • Use gaming/simulation method to illustrate the functional groups of alkanes, alkenes and alkynes
		b. Isomerism	• Class discussion of chain isomerism • Computer molecular modelling of structural and geometric isomerism to be followed by a class discussion of structural isomerism (chain, position and functional group isomerism) and geometric isomerism (cis and trans isomerism) • Student presentation on the differences between structural and geometric isomerism.
		c. Alkanes, Alkenes and Alkynes i. Sources/ preparation ii. Physical and chemical properties iii. Reactivity iv. Uses	• Using cooperative learning (think-pair-share and group work) • Using individual and group presentations (being mindful of gender roles) • General class discussion • Videos and computer simulations
		d. Alkanols and Alkanoic acids (i) Sources/ reparation (ii) Structure and shape (iii) Physical and chemical properties (iv) Uses (v) Petroleum	• Using cooperative learning (think-pair-share and group work) • Using individual and group presentations (being mindful of gender roles) • General class discussion • Videos and computer simulation • Visit to industrial sites to interact with workers, observe and discuss the application of Organic Chemistry in the industry • Write a report on the industrial visit for a general class discussion

Course Assessment (Educative assessment: of, for and as learning)	**Component 1**: Formative assessment (quizzes, class tests, class exercises, and assignments) Summary of Assessment Method: Quizzes, class test, class exercises and assignments on Units 1, 3 and 4 (core skills to be developed: critical thinking , creativity, and personal development) Assessment Weighting: 30% Assesses Learning Outcomes: CLO 1, 2, 4 and 5 **Component 2**: Formative assessment (individual and/or group presentations) Summary of Assessment Method: Individual and/or group presentations on Unit 2, 4, 5, 6 and 7 (core skills to be developed are effective communicative skills, collaborative skills, and critical thinking skills). Students will be involved in assessing their colleagues (peer assessment) Assessment Weighting: 30% Assesses Learning Outcomes: CLO 3, 5, 6, 7, 8, 9, 10 and 11 **Component 3**: Summative assessment Summary of Assessment Method: End of semester examination (composed of multiple choice questions and essay-type questions) on Units 1 to 7 (core skills to be developed: critical thinking, creative thinking, problem solving, innovation, and personal development) Weighting: 40% Assesses Learning Outcomes: CLO 1-11
Instructional Resources	1. Charts, pictures and models. 2. Computers and projectors, television, and living objects 3. Excursions and visits, exhibitions and fairs, and experimentation in the laboratory and work-shop
Required Text (core)	Ameyibor, K., &Wiredu M. B. (1991).*GAST chemistry for senior secondary school*. London: Macmillan Education Limited. Chang, R. (2003). *General chemistry: The essential concepts*. (3rd ed.). Boston: McGraw Hill. Dadson, B.A. (2008). *The first course in organic chemistry*. Cape Coast: Risoprint Enterprise. Gallagher, R. & Ingram, P. (1987).*Chemistry made clear*. Oxford: Oxford University Press. Ohia, G.N.C., Amasiatu, G.I., &Ajagbe, J.O. (2005).*Comprehensive certificate chemistry*. Ibadan: University Press PLC.
Additional Reading List	Abbey, T.K., Ameyibor, K., Essiah, J.W., Nyavor, C.B., Seddoh, S. &WireduM.B. (1995).*GAST Science for senior secondary school*. London: Unimax Publishers Limited Whitten, K.W., Davis, R.E., &PeackM.L. (2000) *General Chemistry*. (6th ed.). Fort Worth: Saunders College Publishing.

HIV AND AIDS AND OTHER ENDEMIC DISEASES

CONTEXT

HIV & AIDS and other Endemic Diseases are diseases that students are familiar with. The teaching and learning processes must be done to reflect what students experience. Examples and student exercises should be presented in the context of what they feel in the environment around them and how these can be beneficial to them. Teachers must present their lesson not in an abstract but in real life situation. The lessons should be such that students will be equipped to protect themselves and the people around them. It is to ensure behavioural change among the teachers, learners and the community in which they live. The lessons are to be presented in a lively manner such that outside the classroom, students will continue to develop the interest to continue discussion with peers and even parents. Teachers must take the pain explain concepts that are new to them and show that link between the new concepts and the diseases under discussion. TLM which consist of pictures, videos and postcards must be used to make the lessons real.

Course Title	**HIV/AIDS and Other Endemic Diseases**						
Course Code	**EBS 147**	**Course Level:**	**100**	**Credit Value:**	**2**	**Semester**	**2**
Pre-requisite							
Course Delivery Modes	**Face -to - face** [1] ✓	**Practical Activity** [2] ✓	**Work-Based Learning** [3]	**Seminars** [4] ✓	**Independent Study** [5] ✓	**e-learning opportunities** [6] ✓	**Practicum** [7]
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This course provides trainees with basic knowledge and skills which will enable them behave responsibly to help protect their own health and the wellbeing of their pupils. In addition, the course enables trainees to acquire skills for influencing others, and encourage them to change their immoral behaviour as a way of preventing HIV/AIDS infection. The course also enables trainees to adopt positive attitudes towards people living with HIV/AIDS. Also covered in this course are causes and prevention of endemic diseases in Africa such as Cholera, Diabetes, Hepatitis B and Ebola. NTCEF, NTS 1e,1f & 1g p12; 2b, 2c, 2e &2f, p13; 3e & 3i p14.						
Course Learning Outcomes [8]**:**	**Outcomes** On successful completion of the programme, the student teacher will be able to:			**Indicators**			

including INDICATORS for each learning outcome	CLO1 Demonstrate good knowledge and awareness of HIV and AIDS including other endemic diseases such as cholera, diabetes, hepatitis B and Ebola **NTS 1b 1g**	1.1 Discuss the significant role an effective teacher training equips people with the knowledge and skills acquired by the teacher through effective training helps him/her to deal with the complexities of known and emerging diseases. 1.2 Helps pupils and the community adopt positive lifestyles that can serve as effective tools in creating and living in a healthy. 1.3 Demonstrate to his/her pupils and the community members that the only effective way of avoiding HIV and other endemic diseases is to adopt positive lifestyle
	CLO2 Acquire skills required to prevent the spread of such diseases. **NTS 1b, 1c p. 12**	2.1 Use appropriate explanatory tools such as brain- storming and demonstration, to explain to pupils how abstinence, can help avoid HIV infection 2.2 Help his/her students demonstrate attitudes that are indicative of adoption of new life style behaviours consistent with what is required in an effort avoid contracting HIV and endemic diseases.
	CLO3 use the knowledge and skills acquired to behave responsibly in the world of HIV and AIDS and other endemic diseases **NTS 2b, 2c**	3.1 Provide accurate explanation relating to the nature of the HIV virus thus debunking some explanation they receive from unreliable sources as superstitions that in no way affects the spread of HIV and some endemic diseases and to stress the fact that with appropriate behavior such diseases cannot easily affect them. 3.2 Lead their students to understand that unprotected sex and careless handling of food items that are especially eaten off the street can easily lead to the acquisition of HIV and other endemic diseases such as cholera
	CLO4 Build a supportive environment for people suffering from such diseases. **NTS 3c, 3o**	4.1 Assist pupils to realize that behaving antagonistically against people with any form of disease is a recipe for they going underground and spreading the disease.

				Rather becoming supportive help in an open and frank discussion of any health challenges thus helping to fight the disease in a more collective way 4.2 Students are encouraged to participate in social support activities that give hope to those who suffer from HIV and other endemic diseases for which social support plays a significant role
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1.	The meaning and Modes of Transmission of HIV/AIDS.		1. State the full meaning of HIV and AIDS. 2. Explain the difference between HIV and AIDS. 3. State the main modes of HIV transmission. 4. Identify and Correct common misconceptions of HIV and AIDS transmission.
	2.	Origin and Theories of HIV and AIDS		1. Explain how HIV and AIDS was first detected. 2. Explain the theories about the origin of HIV.
	3.	Stages of infection of HIV and AIDS		1. Describe the stages of HIV and AIDS infection. 2. Differentiate between major and minor sign.
	4.	Identify pathogens and mode of spread of other endemic diseases		1. List at least four (4) types of endemic diseases and indicate the modes of transmission. 2. Identify at least two (2) symptoms each of cholera, diabetes, hepatitis B, and Ebola
	5.	HIV and AIDS and other endemic diseases and their prevention strategies		1. State and explain six (6) Socio – Cultural conditions that lead to the spread of such diseases among males and females 2. Identify five (5) reasons why both men and women should be involved in prevention programmes. 3. Identify primary prevention strategies in the spread of HIV and other endemic diseases

				4. Explain two (2) Strategies each for managing the selected diseases.
	6.	Counselling and care given to those infected and at risk		1. Explain what is Counselling and Testing (CT). 2. State and explain five (5) reasons why Counselling and Testing is necessary in an individual's life. 3. Explain the stages involved in undergoing Counselling and Testing.
	7.	Impact of endemic diseases on the individual, family community and nation		1. State at least three (3) effects each of HIV and AIDS and the other endemic diseases on an individual's, health education and income. 2. Demonstrate how such diseases can affect the individual's health and work output resulting in loss of income and creation of social burdens 3. Mention and explain at least three (3) ways each that such diseases can affect the family, community and nation.
	9.	Impact of HIV and AIDS on education		1. Mention at least three (3) areas in education that may be affected by HIV and AIDS. 2. Discuss the effect of HIV and AIDS on demand for and supply of education. 3. Identify and explain at least four (4) effects of HIV and AIDS on the process of education. 4. Discuss four (4) ways that education can equip teachers with knowledge and skills that prevent HIV transmission.
	10.	Stigma and discrimination		1. Describe endemic-related stigma and how it leads to discrimination against people living with such diseases 2. Describe how AIDS-related stigma especially fuels the HIV and AIDS epidemic. 3. Describe how stigma and discrimination affect PLWHAs.

				4. Identify and explain three (3) ways of reducing stigma and discrimination.
	11.	Sexual Harassment and abuse		1. Explain the concepts of sexual harassment and sexual abuse. 2. Identify situations and activities that can lead to these sexual offences.
	12.	Wars, internal and external displacement of people and how they affect the spread of HIV and other endemic diseases		1. Identify causes of war in Africa. 2. Discuss the role these wars play in both internal and external displacement and migration of people. 3. Examine the impact of these wars on the spread of such diseases within countries and across international boundaries
Course Assessment Components[9] : (Educative assessment of, for and as learning)	**Component 1:** Formative assessment (Individual assignments and quizzes) to demonstrate understanding of concepts such HIV, AIDS, Endemic diseases (40%) – CLO 1-3 **Component 2:** Summative assessment (End of semester examination which covers every topic dealt with (60%)) CLO 1-4			
Instructional Resources	Text books, Articles from publications, Videos,			
Required Text (core)	World Education/Ghana (2006). Window of Hope, Revised HIV and AIDS syllabus for Teacher Training Colleges, Students' manual. World Education/Ghana (2006). Window of Hope, Revised HIV and AIDS syllabus for Teacher Training Colleges, Tutors' manual. Ministry of Education, Science and Sports (2006). *Window of Hope: Revised HIV/AIDS syllabus for teacher training colleges tutors' manual.* Accra: World. Ocansey. F., Opare J.A., Kissah-Korsah, K., & Kutor N. (2010). *The HIV alert school model: HIV and AIDS syllabus for colleges of education: Tutor's manual.* Accra: Ministry of Education/ GES. Teacher Education Division (2010). *The HIV alert school model: HIV and AIDS syllabus for colleges of education*. Accra: Teacher Education Division of the Ghana Education			

Additional Reading List [10]	Bukenya, D., Chirchir, B., & Wangila, S. (2006). *HIV/AIDS workplace training manual: Peer Education*. Nairobi: African Medical and Research Foundation. Cohen, P.T., Sande, M. A., & Volberding, P.A., (1994). *The AIDS knowledge base*. Boston: Little Brown and Company. Dewey, J. (1938). *Experience and education*. New York: Simon and Schuster. Ihejirika, J. C. (2000). *Fundamentals of adult education delivery: A sociological perspective*. Oweri: Springfield publishers. Irinoye, O. (1999). Counselling people affected by HIV and AIDS. *The Continuing African HIV/AIDS epidemic*, 129 – 137.Publishing Corporation. Kolb, D. (1984). *Experiential learning: experience as the source of learning and development.* Englewood Cliffs, New Jersey: Prentice Hall.

GHANAIAN LANGUAGE AND CULTURE - CULTURAL STUDIES

CONTEXT

Language and culture are said to be inextricably linked together. Some people are of the opinion that culture is only drumming and dancing. Some students enter the programme with some notion of culture. The study of the Ghanaian culture is considered to be crucial to the study of the Ghanaian language, in that it provides an avenue for exposing students not only to their culture but also serves as a pretext for teaching vocabulary and terms that derive from the cultural practices of the people.

<table>
<tr><td>Course Title</td><td colspan="7">Ghanaian Language and Culture - Cultural Studies</td></tr>
<tr><td>Course Code</td><td>EBS 137</td><td colspan="2">Course Level 100</td><td colspan="2">Credit value: 2</td><td>Year One,</td><td>Semester 2</td></tr>
<tr><td>Pre-requisite</td><td colspan="7">N/A</td></tr>
<tr><td>Course Delivery Modes</td><td>Face-to-face
√</td><td>Practical Activity
√</td><td>Work-based learning
√</td><td>Seminars
√</td><td>Independent Study
√</td><td>e-learning opportunities
√</td><td>Practicum</td></tr>
<tr><td>Course Description</td><td colspan="7">The course will help students to study and appreciate selected customs, institutions and cultural practices of their people, in terms of modern thinking and values. It will focus on practices and institutions that call for preservation or otherwise, as regards of traditional and modern values. (NTS 2c:13), (NTS 3a: 14), (NTS 3e:14), (NTS 3h: 14), NTS 3o: 14),</td></tr>
<tr><td rowspan="2">Course learning outcome including INDICATORS for each learning outcome</td><td colspan="4">Outcomes
On successful completion of the course the student teacher will be able to:</td><td colspan="3">Indicators</td></tr>
<tr><td colspan="4">CLO 1. Create awareness among students' regarding the significance of the customs (NTS 2c:13), (NTS 3a: 14), (NTS 3e:14), (NTS 3h: 14), NTS 3o)

CLO 2. Enrich students' vocabulary and terminology ((NTS 2b:13), (NTS 2c:13), (NTS 2f:13)</td><td colspan="3">• be aware of the significance of their culture
• acquire a comparative knowledge of their customs and that of other people
• realize that language and culture are linked</td></tr>
</table>

	CLO 3. Help students acquire a comparative knowledge of their customs and those of other peoples. (NTS 2e:13), (NTS 3j:14) (NTS 2f:13), (NTCEF pg23)		• enrich their vocabulary and terminology	
Course content	**Units:**	**Topics:**	**Sub-topic**s:	**Suggested Teaching Learning Activities**
	1	• What constitutes culture • Selected cultural practices: • Rites of Passage • Birth • Marriage • Death Values of the people	• Characteristics of culture • Puberty rites • Marriage • Naming ceremony • Child upbringing • Divorce –causes and effects • Funeral rites – (effects) • Morality	1. Class brainstorm on the concept of culture 2. Discuss the various characteristics of culture 3. Discuss the peculiar features of the adolescent age 4. Define and explain types of marriage 5. Explain naming systems and child upbringing 6. Discuss the causes and effects of divorce **7.** Discuss the effects of funeral celebrations in Ghana
Course Assessment Component	**Component 1:** Formative Assessment (Quizzes) Summary of Assessment Method Quizzes: Class assessment would be based on quizzes. There would be two quizzes for the semester. **Weighting 20%.** Assesses Learning Outcomes: CLO 1			
	Component 2: Formative Assessment (Individual assignments and group presentations) Summary of Assessment Method Class Participation: Students must attend all lectures and must be punctual too. They are supposed to participate actively in class discussions and assignments. Assessment: will be based on class presentations and assignments.			

	Weighting 20% **Total Formative Assessment Weighting 40%** Assess Learning Outcomes: CLO 2
	Component 3: Summative Assessment (End of Semester Examinations) Summary of Assessment methods: An end of semester that encapsulates course learning outcomes (CLOs) 1 – 3, and make use a combination of the formative assessment methods in component one and two. Demonstration: Problem solving, critical thinking and feedback. **Weighting 60%** Assesses learning outcomes: CLO 1,2, and 3
Instructional Resources	1. Language Laboratory 2. Sound recorder 3. LCD projector
Required Text (core)	Nukunya, G. K., (1992). Tradition and change in Ghana: An Introduction to sociology, G. U. P., Accra. Opoku, R. R. (1959). Religion and Art in Ashanti; Oxford University Press, London. Sarpong, P. K. (1974). Ghana in Retrospect, Some aspects of Ghanaian Culture. Ghana Publishing Corporation, Tema. Warren, D. M. (1986). The Akans of Ghana. Printer Limited, Accra. Danquah, J. B. (1944). The Akan Doctrine of God. Lutterworth Press, London. Gyekye, K. (1990). *African Cultural Values*: An Introduction. Sankofa Publishing Company, Accra.
Additional Reading list	

HUMAN-LAND ISSUES IN SOCIAL STUDIES

CONTEXT

This programme is developed to train teachers who could teach students to appreciate and solve the emerging environmental and social issues that negatively affect our communities. These issues are grounded within the social, economic and political spheres. Many of these issues are as a result of certain misconception and attitudes that negatively affect our communities. This programme is, therefore, design to equip teacher-trainees with the appropriate knowledge, skills and values to enable them to assist learners to live well as responsible citizens who have adequate knowledge on the social, economic and political issues in Ghana.

<table>
<tr><td>Course Title</td><td colspan="8">Human-Land Issues in Social Studies</td></tr>
<tr><td>Course Code</td><td>EBS 157</td><td>Course Level:</td><td>100</td><td>Credit Value:</td><td>2</td><td colspan="2">Semester</td><td>2</td></tr>
<tr><td>Pre-requisite</td><td colspan="8">Successful completion of the natural environment</td></tr>
<tr><td>Course Delivery Modes</td><td>Face -to -face [1] X</td><td>Practical Activity [2] X</td><td colspan="2">Work-Based Learning [3]</td><td>Seminars [4] X</td><td>Independent Study [5] X</td><td>e-learning opportunities [6]</td><td>Practicum [7]</td></tr>
<tr><td>Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)</td><td colspan="8">This course introduces students to the human-land issues in Social Studies and locates its study within the context of the interaction between humans and their natural, cultural and social environments. Natural features and occurrences on the earth as a home of humans, the activities of humans on the earth, and some of the problems which ensue as a result of the human-environment interaction are examined. (NTECF; NTS 2c, p 13).</td></tr>
<tr><td rowspan="4">Course Learning Outcomes [8]: including INDICATORS for each learning outcome</td><td colspan="5">Outcomes:
This course seeks to:</td><td colspan="3">Indicators:</td></tr>
<tr><td colspan="5">1. equip students with knowledge of the components of the environment and basic mapping skills. NTS 2c, p 13</td><td colspan="3">1. explain the components of the environment</td></tr>
<tr><td colspan="5">2. help students to develop the ability to make rational decisions about land use. NTS 2c, p 13</td><td colspan="3">2. acquire basic mapping skills</td></tr>
<tr><td colspan="5">3. provide opportunities for students to locate places within the environment NTS 2c, p 13</td><td colspan="3">3. explain the uses of land</td></tr>
</table>

	4. equip students with the knowledge and skills to describe physical, social and cultural features within the environment accurately. NTS 2c, p 13			5. describe physical, social and cultural features within the environment
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1.	The Environment and Environmental problems	1. Meaning of Environment 2. Types of Environments (physical, social and cultural) 3. Physical Environment (air, land and water) 4. Environmental Problems a) Air Pollution (meaning, causes, effects & solutions) b) Water Pollution (meaning, causes, effects & solutions) c) Land degradation (meaning, causes, effects & solutions)	1. Lead teacher-trainees to explain the environment 2. Use small groups to discuss the types of environment 3. Brainstorm with teacher-trainees to identify the environmental problems
	2.	The Earth and its natural occurrences	1. The Solar System 2. The Two Major Earth Movements 3. Continents and Oceans 4. Elements of	1. Guide teacher-trainees to explain the solar system and the movement of the Earth 2. Lead a whole discussion to explain Continents and Oceans; elements of climate and weather 3. Guide teacher-trainees to identify the types of rainfall 4. Task teacher-trainees to explain the importance of

			Climate and Weather 5. Types of Rainfall (convectional, cyclonic, relief) 6. Major Landforms Importance of Landforms	landforms
	3.	Maps and mapping skills	1. Meaning of Maps 2. Essential Components of Maps 3. Types of Maps 4. Importance of Maps 5. Explanation of Scales 6. Different Ways of Stating Scales Measurement of Distance and Area Using Scales	1. Lead the class to explain what a map is and the various types of maps. 2. Task teacher-trainees to identify the importance of maps 3. Use the appropriate instructional resource to explain Scales, stating Scales of Measurement of Distance and Area
	4.	Showing direction, position and features on maps	1. Compass/Cardinal Points (including True, Magnetic and Grid Norths) 2. Longitudes and Latitudes 3. Conventional Signs (meaning, classification and significance) 4. Methods of	1. Use a Compass to direction and positions 2. Use the appropriate instructional resource to explain longitudes and latitudes 3. Lead a whole class to enable teacher-trainees to

			Showing Relief Drainage Patterns	explain the methods of showing relief drainage patterns
Course Assessment Components[9] : (Educative assessment of, for and as learning)	**Component 1**: Formative assessment Summary of Assessment Method: Quizzes and assignment Weighting: 20% Assesses Learning Outcomes: CLO 1 and 2 (units 1 - 2)			
Component 2	**Component 2**: Formative assessment Summary of Assessment Method: Quizzes and assignment Weighting: 20% Assesses Learning Outcomes: CLO 3 and 4 (units 3 - 4)			
Component 3	**Component 3**: Summative assessment Summary of Assessment Method: End of semester examination Weighting: 60% Assesses Learning Outcomes: CLO 1, 2, 3 and 4 (units 1 - 4)			
Instructional Resources	Textbook, Atlas, Maps, Compass, Resource person			
Required Text (core)	Bradshaw, M. & Weaver, R. (1995). *Foundations of physical geography.* New Jersey: Brown Publishers.			
Additional Reading List [10]	Academy of Arts and Sciences. (1992). *Sustainable development and the environment*. Accra: GAAS. Academy of Arts and Sciences. (2001). *Some crucial development issues facing Ghana*. Accra: GAAS. Cobbold, C. (2013). *Introduction to the nature and philosophy of social studies*. Cape Coast: Hampton Press. Cobbold, C. (2010). Conceptualizing social studies: Toward a better understanding for effective teaching. *Ghana Journal of Education: Issues and Practice 2*(1), 30-44. Cobbold, C. (1999). *Implementation of the social studies programme in teacher training colleges in Ghana: An evaluation*. Unpublished M.Phil Thesis, University of Cape Coast.			

STUDIES IN LITERATURE I – PROSE

CONTEXT

The goal of the course is to sustain an unwavering focus on developing knowledge, skills, pedagogy and essential understanding required of a good English teacher to teach English Language and Literature in English from Early Childhood through to the Junior High School in Ghana. The course is to equip the student-teacher with an understanding of contemporary theories, concepts and practices in English Studies and teaching in enhancing literacy. The English courses introduce the student-teacher to the basics of language acquisition skills as well development strategies. The skills: listening, speaking, reading and writing, are given premium throughout the student-teacher's training. These skills are crucial for their academic endeavours, which they will further impart to the Ghanaian child. Though the current teacher training curriculum addresses it, intensifying it comes with numerous advantages to all stakeholders of Ghanaian education. The courses are designed in a manner that the sub-disciplines complement one another. There are ICT components imbedded in the teaching-learning activities to facilitate interactive and learner-focused approach. There is a symbiotic approach in the training of the teachers; as the trainees acquire these skills for personal use and also impart to the students.

The detailed course descriptions and objectives pay attention to the individual courses and attempt to draw synergy from "The National Teacher Education Curriculum Framework" and "National Teachers' Standards for Ghana Guidelines". The assessment portfolios would pay heed to Bloom's Taxonomy of higher level questioning.

Course Title	**Studies in Literature I – Prose**						
Course Code	**EBS 158**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**1**
Pre-requisite	Students have been introduced to Literature at the senior high school						
Course Delivery Modes	**Face -to – face X**	**Practical Activity [2]**	**Work-Based Learning [3]**	**Seminars X**	**Independent Study X**	**e-learning opportunities X**	**Practicum [7]**
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This course is designed to expose students to prose studies. It also focuses on forms and features of oral African narratives. It highlights the types and elements of prose and covers the basic terms. It aims at helping students to appreciate literature from different theoretical perspectives. Students will be required to study recommended texts in prose, selected from both male and female writers. Focus will also be on thematic issues that are both general and gender specific. Again, the student-teacher will be required to study a variety of African texts and critique them. They will in this course also look at themes, related ideas and techniques including language use, the relevance of the text to contemporary situations and come out with their personal responses to issues raised whilst analysing the texts. This course will once more equip the student-teacher to gain the needed professional knowledge that will be used to engage the pupil in relevant discourse. The course will be delivered through whole group discussions, small group discussions, assignments, presentations. Assessment will be done through quizzes, projects, group presentations and examination. The course fulfils the following NTS and NTECF requirements. (NTECF, NTS 1a, e, 2 c,f 3 e,f,g,i, l,o)						
Course Learning Outcomes [8]: including INDICATORS for each learning outcome	**Outcomes** By the end of the course the student will be able to:				**Indicators**		
	1. analyse text and apply to real-life situations. (NTS2c, 3a, f, i)				1.1.discuss the features of a prose 1.2.read given texts and analyse them, situating them in real life.		
	2. use appropriate literary terms in relation to the selected texts. (NTS 2c)				2.1. identify and discuss the literary terms used in the selected texts.		
	3. appreciate the cultural values of other people, societies and representation of gender in the texts. (NTS 3l, o)				3.1 discuss the texts in the light of different cultural values and draw the similarities that they have with other cultures. 3.2 discuss the text and the message it presents from the point of view of gender related issues.		

	4. use their acquisition of a variety of language structures which then improve their use of English language. (NTS ia, e, f)			4.1 Work in groups to present written responses using the structures learned in the various language courses.
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	Definition of Literature	1.Definition of Literature 2. Literary genres: prose, drama, poetry 3. Oral African Literature: forms, features, etc.	Review students' knowledge on the definition of literature. Illustrate three texts and ask students to categorise into genres. Let students Brainstorm on what Oral African Literature is. Discuss its features and forms
	2.	Types and elements of prose	1. Fiction and Non-fiction 2. Elements of prose a. Character – protagonist, antagonist, others b. Characterization - Methods of characterization - direct exposition - character in action - internal monologue, etc. c. Plot (what) – action of the story - beginning (exposition) - middle (body) - end (conclusion) d. Setting – (where and when) - possible uses of setting, eg. - as a shaper of events - it adds an emotional quality to the work, etc. - relationship between	Providing illustrative materials, guide students to discuss the terms Fiction and Non-fiction (and their synonyms) Discuss the elements of prose and their related terms Group the class to present brief write-ups on each of the elements

			setting and character e. Style (how) - how a particular writer says things – it is the tone and voice of the writer; it includes use of language f. Point of view – from where is the story told? - Who tells the story? The narrator. - From what point is his view? i. First person limited ii. Third person limited iii. Third person omniscient (Discuss the features, merits and demerits of each view) g. Theme	Discuss the concept 'Tropes'. Situate each literary device in context for discussion Discuss the concept 'Schemes'. Situate each literary device in context for discussion
	3.	Study of basic literary terms appropriate to the text.	1.Tropes: Metaphor Irony Personification Symbolism Metonymy Pathetic fallacy 2.Schemes: Free repetition Anaphora Epistrophe	Lead students to discuss the text in the light of the elements discussed above. In smaller groups, assign a chapter each to identify an element and discuss it.
	4.	Study of selected prose texts.	1.Text A (Discuss the text in the light of the elements discussed above) 2. Text B (Same as above) 3. Text C (Group presentations based on the elements of prose fiction)	Assign tasks for students to present for scoring. Each group is to discuss and present on an element in the text

Course Assessment Components[9] : (Educative assessment of, for and as learning)	Component 1: Formative assessment (40%) Summary of assessment methods: Individual assignments- concept of elements of prose (10%); class participation (10%); group presentation- text 3 (10%) and a quiz – short answer questions on the texts (10%) Assessing Learning Outcomes: 1, 2, 3 and 4. Component 2: Summative assessment: (60%) End of semester examination on units 1 – 4 to develop core skills such as knowledge application and personal development. The examination will adopt varied approaches; from short answer questions to essay questions. Assessing Learning Outcomes: 1, 2, 3 and 4.
Instructional Resources	Projector and computer, Literary texts
Required Text (core)	Minot, S. (1993). *The three genres*. New Jersey: Patience Hall.
Additional Reading List [10]	Bret, R. L. (1978). *An introduction to English studies*. London: Edward Arnold. Mayhead, R. (1981). *Understanding literature*. Cambridge: C.U.P. Murphy, M. J. (1972). *Understanding unseens*. London: George Allen & Unmwin. Torto R. T. (2014). *General knowledge of literature: Introduction to literary devices, termsand concepts*. (Revised edition) Cape Coast: Nyakod Printing Works.

SUPPORTED TEACHING IN SCHOOLS

CONTEXT

To give the Primary Education trainees a balanced experience across the grade levels of their specialization, trainees need to be exposed to authentic classroom-based aspect of their Bachelor of Education (Primary Education) programme by providing opportunities for them to experience classroom interactions, this time, at the Upper Primary Level.

<table>
<tr><td>Course Title</td><td colspan="7">Field Experience in Schools II</td></tr>
<tr><td>Course Code: EBS 192</td><td colspan="2">Course Level: 100</td><td colspan="2">Credit Value: 3</td><td colspan="2">Semester: 2</td></tr>
<tr><td>Pre-requisite</td><td colspan="7">EBS 191</td></tr>
<tr><td>Course Delivery</td><td>Face-to-Face
✓</td><td>Practical Activity
✓</td><td>Work-based Learning
✓</td><td>Seminars
✓</td><td>Independent Study
✓</td><td>e-learning Opportunities
✓</td><td>Practicum
✓</td></tr>
<tr><td>Course Description for significant learning (indicate NTS, NTECF, BSCGLE to be assessed)</td><td colspan="7">This course is the second of a series of authentic classroom-based aspect of the Bachelor of Education (Primary Education) programme, which provides trainees with opportunities to observe actual classroom interactions and work with teachers (mentors) and their peers. Trainees have in the past experienced the classroom as students. This time they step in not as students to be taught directly but with the aim of beginning to gain a sense of what the classroom environment looks like. To do this effectively, opportunities will be provided for trainees to use a simple lesson observation instrument and how to interview pupils and teachers respectively about their experiences in the classroom, to promote reflection. They will also be guided to use portfolios in which they document their field experience activities. Trainees are expected to visit the school one day a week for 6 weeks in the semester. In the first semester, aspects of the course arrangement were undertaken at the Upper Primary Level. This second Field Experience arrangement is to be used by Primary Education teacher trainees at the Upper Primary Level. The Course Content of the first STS has therefore been modified slightly to provide opportunities in this second STS to begin orienting trainees to become reflective in their practice. NTECF; NTS 1 a, d, e, f &g</td></tr>
<tr><td rowspan="2">Course Learning Outcomes: including INDICATORS for each learning</td><td colspan="3">OUTCOMES
By the end of semester, trainees will be able to:</td><td colspan="4">INDICATORS</td></tr>
<tr><td colspan="3">CLO 1: Demonstrate the ability to engage in reflective thinking of the activities undertaken during the first Field Experience NTECF; NTS 1 a, d, e, f &g</td><td colspan="4">1.1: Submit a detailed reflection of their school visits in the first semester.
1.2: Produce, as part of the portfolio, a well-organized field experience log that shows activities undertaken in the school and the support received from their mentors.</td></tr>
</table>

outcome	CLO 2: Exhibit the ability to interact with students and teachers, including administrators of the school they are visiting **NTECF; NTS 1 a, d, e, f &g**	2.1: Produce a handwritten journal that shows a record of dates, times and descriptions of their experiences with the different categories of people. 2.2: Describe aspects of the school culture such as the language of instruction in the classes visited 2.3: Interview students, teachers and head of school about their attitudes towards certain school subjects and their experiences in the school.
	CLO 3: Use a simple observation handout to observe lessons **NTECF; NTS 1 a, d, e, f &g**	3.1: Submit a record of lessons observed using a simple observation guide. 3.2: Describe the physical environment of the class(es) visited such as the quality of posters, pictures or bulletin boards and what they depict. 3.3: Submit a summary description of the lessons observed highlighting how the teacher communicated with the class, strategies the teacher used to assess student understanding and resources, books, or materials used by the teacher. 3.3: Detail any special arrangements made by the teacher to support students with physical or learning challenges.
	CLO 4: Explain the key demographics of the school context **NTECF; NTS 1 a, d, e, f &g**	4.1: Submit a brief analysis of the population of the school by gender 4.2: Describe the diverse ethnic background of students in the school, as well as the dominant occupation of their parents

	Units	**Topics**	**Subtopics**	**Teaching & Learning Activities**
Course Content	1	Reflections on activities undertaken in the first STS	Looking back on last semester's activities and identify difficulties or processes that need to be improved	1.1: Use of PowerPoint and other visual representations to sketch a "Bird's-Eye View" of 1.1.1: The school visited last semester 1.1.2: Classes observed last semester 1.1.3: Other activities undertaken during the school visits last semester

				1.2 Undertake a self assessment by answering the following questions: • What did I need to do? • How did I do it? • What do I need to do to improve my experience?
	2	Development of instruments to be used for this year's STS	Activity logs, journals, and lesson observation forms	Lead students to discuss and develop various instruments to be used during their school visits and how these can fit into their overall portfolios
	3	College level practice on how to conduct interviews and develop portfolios	Guided learning of how to develop portfolios of field experiences and interview different categories of members of the school	3.1: Use videos, multimedia systems of actual lessons and typical school activities and sessions to get students to practice developing sample activity logs, description of experiences, observation of lessons etc. and putting them together into miniature portfolios 3.2: Provide opportunities to support trainees on how to interview pupils and teachers respectively about their experiences in the classroom
	4	School level orientation	Orientation by Head of School and Mentors on school culture and other relevant policies	Mentors and school head interact with trainees to familiarize the latter on the Special Area 2 in the JSS environment, as well as discuss activities to be undertaken by trainees as prescribed in the Supporting Teaching Guide
	5	Interaction with key members of the school	Interaction with head of school, teachers, students and examine various school documents	5.1: Interact with the head of school, teachers, students and observe aspects of the school culture such as the language of interaction outside of the classroom and for instruction in the classes visited 5.2: Interview students, teachers and head of school about their attitudes towards certain

				school subjects and their experiences in the school 5.3: Examine school documents and analyze the population of the school by gender 5.4: Examine school documents and capture the diverse ethnic background of students in the school, as well as the dominant occupation of their parents
	6	Classroom observations	Lesson observation using a simple observation guide and focusing on special need students.	6.1 Observe the physical environment of the class(es) visited and record the quality of posters, pictures or bulletin boards and what they depict. 6.2: Observe lessons taught by the class teacher taking note of strategies/pedagogies used in teaching 6.3: Observe the nature of student-teacher and student-student interactions 6.4: Observe strategies the teacher uses to assess student understanding and resources, books, or materials used by the teacher. 6.5: Observe students with special needs 6.6: Observe and record any special arrangements made by the teacher to support students with physical or learning challenges. 6.7: Observe both girls and boys responses to teaching and learning in classroom enquiries 6.8: Audit, review and evaluate the learning resources in the classroom in terms of gender in textbooks, for example.
	7	Finalization of trainees' portfolios		One week layover for trainees to finalize their portfolios for submission

	8	Trainee presentations		Provide opportunities for trainees to make presentations of their experiences. This could take the form of poster presentations
Course Assessment Components: (Educative assessment of, for and as learning)	**Component 1: Portfolio Assessment (NTS 1 a, e, & f)** Trainees will be expected to develop portfolios detailing their interactions with students, their mentors and other teachers, the head of school, trainees personal experiences, descriptions of lessons they observed, and any activities undertaken in the school (see CLO 1 to 4). These portfolios will be assessed using rubrics developed to assess the quality of presentation and detail provided. The portfolio assessment will constitute 60% of trainee's score **Component 2: Evaluation by mentors (NTS 1 d, e, f, & g)** Trainees will be assigned who will work with them and guide them through out the period. These mentors will assess their mentees punctuality, regularity and attitudes to work, professionalism (including how they behave towards students with physical or learning challenges and interact with teachers and students) and willingness to support extra curricular activities of the school. The mentor's evaluation will constitute 40% of trainee's score			
Instructional Resources	Projectors, Laptop Computers, Video Recordings and other Multimedia Resources, Files, Field Notebooks			
Required Text (Core)	Manion L, Keith, R. B., Morrison, K., & Cohen, L. (2003). A guide to teaching practice. Available at http://www books.google.com/books . Perry R 2004. Teaching practice for early childhood. A guide for students. Available at http://www Routledge.com catalogues./0418114838.pdf.			
Additional Reading List	Kiggundu, E., & Nayimuli, S. 2009 Teaching practice: a make or break phase for student teachers *South African Journal of Education, (29),* 345-358. Menter I 1989. Teaching Stasis: Racism, sexism and school experience in initial teacher education. *British Journal of Sociology of Education,* 10:459-473.			

LITERATURE OF THE GHANAIAN LANGUAGE

CONTEXT

Some Critical Teacher Education (ITE) learners enter the programme with limited knowledge of literature and the types of literature and this hinders their learning process. While one school of thought holds the view that literature must perform some cultural functions, another school of thought argues that it must be seen only in terms of its aesthetic value. Either way, literature is of importance to human. In this course, we are going to look at the term literature and what it means and identify the major characteristics and functions of literature.

Course Title	**Literature of the Ghanaian Language**						
Course Code	**EBS 151**	**Course Level 100**	**Credit value 3**	**Semester: Year One Semester Two**			
Pre-requisite	**N/A**						
Course Delivery Modes	**Face-to-face** √	**Practical Activity** √	**Work-based learning** √	**Seminars** √	**Independent Study** √	**e-learning opportunities** √	**Practicum**
Course Description	**Course Description** This course entails both oral and written literature. It guides students to be conversant with what constitutes literature, and the characteristics and features of oral and written literature. It also guides students to identify the various types of oral as well as written literature. The written literature component guides students to the study of set books in the various genres, prose, drama and Poetry. Areas to cover in the written literature include the scope, characteristics of the genre. The analysis will include the appreciation of the books and discovering issues such as themes and literary devices in the genre as well as types of the prose, drama and poetry The Oral Literature component equips students with skills to appreciate the literary, artistic, and aesthetic qualities of the verbal art forms of their people. The course covers areas like proverbs, dirges, songs – cradle, play, work, war, folktales, prayer text etc.. The course is designed to meet the following NTS, NTECF, BSC, GLE expectations and requirements. (NTS 1a, b:12), (NTS 2c:13), (NTS 2e:13), (NTS 2f:13), (NTS 3e:14) (NTS 3j), (NTS 3k:14)						

Course learning outcome including INDICATORS for each learning outcome	On successful completion of the course, the student teacher will be able to:	
	Outcomes	**Indicators**
	CLO 1 Have a clear understanding of the term "literature" and to differentiate between oral and written literature. (NTS 2c:13), (NTS 2e: 13), (NTS 3a,c:14) **CLO 2** Appreciate both oral and written literature pieces. (NTS 1c,e:12), (NTS 3h:14), (NTS 3e:14), (NTS 3f,g:14), **CLO 3** Do intensive and extensive reading and analysis of set books selected from the three literary genres: Drama, Prose and Poetry. (NTS 1d,g:12), (NTS 3b:14), (NTS 1a,b:12), **CLO 4** Determine the effective use of language in literary pieces.(NTS 2c:13), (NTS 2e:13), (NTS 3a,c:14)	1. Define what Literature is 2. Analyze both Oral/Written Literary text 3. Identify the various forms of literature 4. Identify the various literary devices

Course content	Units:	Topics:	Sub-topics:	Suggested Teaching Learning Activities
		Literature Oral Literature Written Literature	1. What constitutes Literature 2. Types of Literature 3. characteristics 1. Oral Literature: types e.g. • songs – cradle, play, work, war, • folktales • prayer text • dirges 2. characteristics 3. Types: Prose, Drama, Poetry 4. Features e.g. theme, plot, characters language • quality and effectiveness • appropriateness to socio-cultural values of the people study of recommended set books: novel, drama and poetry	1. Discuss what literature is 2. Use discussion to bring out the difference and similarity between oral and written literature 3. Determine the characteristics of the literary genre: Prose, Drama and Poetry. 4. Develop the skills for reading set books
Course Assessment Component	**Component 1: Formative Assessment** (Quizzes) Summary of Assessment Method			

	Quizzes: Class assessment would be based on quizzes. The quizzes will comprise the introductory lessons on literature and the oral nature of literature. **Weighting 20%.** Assesses Learning Outcome: CLO 1&2
	Component 2: Formative Assessment (Individual assignments and group presentations) Summary of Assessment Method Class Participation: Students must attend all lectures and must be punctual too. They are supposed to participate actively in class discussions and assignments. Assignment: The assignment will assess the problem solving skills and students ability to identify themes, summarize and appreciate written literature and will address CLO 2&3. **Weighting 20%** **Total Formative Assessment 40%**
	Component 3: Summative Assessment (End of Semester Examinations) Summary of Assessment methods: An end of semester that encapsulates course learning outcomes (CLOs) 1 – 4, and make use a combination of the formative assessment methods in component one and two. Demonstration: Problem solving, critical thinking and feedback. **Weighting 60%** Assesses learning outcomes: CLO 1,2,3 and 4
Instructional Resources	1. Language Laboratory 2. Sound recorder 3. LCD projector
Required Text for all Ghanaian Languages	Agyekum, K (2013) *Introduction to Literature*, Accra: Adwinsa Publishers Cadden, J (1986) *Prose Appreciation for 'A' Level* . London: Hodder& Stoughton Finnegan, R (1995) *Oral Literature in Africa*. Oxford University Press Finnegan, R (1977) Oral Poetry: Its Nature, Significance and Social context. USA, Cambridge University Press Kearns, G. ((1987). *Appreciating literature*. Glencoe: Macmillan. Krampah, D. E. (1979). *Helping with literature*. Tema: Ghana Publishing Corporation. Meyer, M. (2010). *Bedford introduction to literature*: Reading, thinking, writing. Bedford: St. Martin's Peck, J. & Coyle, M. (1993). *How to study Literature*. London: Macmillan Press.
Additional Reading List	

GENERAL AGRICULTURE II

CONTEXT

Agriculture has several components, each of which offers several employment and entrepreneurial opportunities for the youth and adults. Rather than viewing agriculture as an ordinary subject, it is important for the teacher to develop an understanding of agriculture from varied perspectives in order to perceive the opportunities as well as constraints that may promote or restrain people from different gender, ages or backgrounds to engage in any of the agricultural enterprises. A teacher who is better placed to understand agriculture can easily adopt creative and varied means to win the interest of young people into agriculture.

Course Title	**General Agriculture II**						
Course Code	**EBS 140**	**Course level:**	**100**	**Credit Value:**	**3**	**Semester**	**2**
Prerequisite							
Course Delivery Modes	**Face-to Face**	**Practical Activity**	**Independent Study**	**Seminar**	**Work-Based Learning**	**E-Learning**	**Practicum**
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	The course introduces students to the basic knowledge of farming systems in Ghana. The advantages and disadvantages of mixed farming, mixed cropping, crop rotation, ecological farming, intensive, semi-intensive and extensive systems of keeping farm animals will be treated. Students will be exposed to the nature and intensity of animal production, agricultural mechanization, fish farming crops farming and marketing in Ghana. The course will equip students with the knowledge and understanding of how land, capital, labour, entrepreneurship and climate interact to affect agricultural production in general. The course will further equip students with knowledge on the scope and problems of marketing agricultural produce in Ghana. Marketing functions and role of marketing agencies will also be treated in this course. The course will be facilitated through lectures, field visits and video presentations, group discussions and E-Learning ***NTS 1b,2b, 3d, 3f NTECF pp. 20-22, 29-31***						

	Outcomes **Upon successful completion of this course, the student will:**	Indicators
Course Learning Outcomes: including INDICATORS for each Learning Outcome	1. demonstrate knowledge and understanding of various farming systems *NTS 1b,2b, 3f NTECF pp. 20-22*	Describe the farming systems in Ghana and their strengths and weaknesses (mixed farming, mixed cropping, crop rotation, ecological farming, intensive, semi-intensive and extensive systems of keeping farm animals)
	2. apply the knowledge and understanding to analyse the strengths and weakness of various farming systems *NTS 1b,2b, 3f NTECF pp. 29-31*	2.1. Enumerate the weaknesses and strengths of various farming systems.
	3. Demonstrate knowledge and understanding of how land, capital, labour, entrepreneurship and climate interact to affect agricultural production in general. *NTS 1b,2b, NTECF pp. 20-22*	Discuss how land, capital, labour, entrepreneurship and climate interact to affect agricultural production
	4. Describe the types of markets, their functions and problems of marketing agricultural produce in Ghana *NTS 3d NTECF pp. 30-32*	4.1Describe the manner in which animal production, agricultural mechanization, fish farming and crops farming are carried out by farmers in Ghana. 4.2 Rate the intensity of animal production, agricultural mechanization, fish farming crops farming in Ghana on a scale of 1 (very low) to 10 (very high)

Course content	**Units**	**Topics**	**Sub-topics (if any)**	**Teaching and learning activities to achieve learning outcomes**
	1	farming systems	Mixed farming, mixed cropping, crop rotation, ecological farming, intensive, semi-intensive and extension systems of keeping farm animals	Farm visits to observe different farming systems followed by group discussions on observations made from the visits.

	2	Advantages and disadvantages of various farming systems	Advantages and disadvantages	Use group discussions to offer students the opportunity to compare the various systems and write out their advantages and disadvantages. Students compare their write-up with what they find in books and on the internet. Look out for location-specific and gender related advantages and disadvantages.
	3	how land, capital, labour, entrepreneurship and climate interact to affect agricultural production	Land, capital, labour, and entrepreneurship as factors of agricultural production Effects of climate on agricultural production	Give students assignment to gather information on the factors of agricultural production, and the effects of climate on agricultural production. In class, students discuss their findings in groups and present group findings on Power-Point for class discussion
	4	Types of markets, their functions Problems of marketing agricultural produce in Ghana		Exposition (using lecture) on types of agricultural markets, their functions. Students are taken to some agricultural markets to interact with male and female sellers, buyers and various operators on the market to find out their perceived problems of marketing agricultural produce.
Course Assessment (Educative assessment of, for, and as learning)	Component 1 Written Assignment on types of farming systems in Ghana, and their weaknesses and strengths.,			
Instructional Resources	Field notebooks Computer (Lap-top) VCR Video projector, Internet connectivity and online resource.			
Required Text (core)	Abbot, J. C., & Makeham, J. P. (1979). *Agricultural economics and marketing in the tropics***.** London: Longman Group Ltd. Brady, N. C. (1990). *The nature and properties of soils* (10th ed.). London: Macmillan Publishing Company. Garcia, S. M. (2009). *A fisher manager's guide book* (2nd ed). Rome: FAO of UN.			

	Hudson, N. (1995). *Soil conservation* (3rd ed.). London: B. T. Batsford Limited Johnson, D. T. (1990). *The business of farming. A guide to farm business management in the tropics*. London: Macmillan Publishers Ltd. Ministry of Education (1994). *Senior secondary school agriculture and environmental studies*. Accra: Evans Brother Ltd. Perry, A., & Thompson, R. (1987). *Applied climatology: Principles and practice*. New York: Rouledge Publishers. Rath, R. K. (2011). *Freshwater aquaculture* (3rd ed.). New Delhi: Scientific Publishers Singh, S. S. (1988). *Principles and practices of agronomy.* New Delhi: Kalyani Publishers Sprenge, R.A (2012). *The food safety handbook (level 2)* London: Highfield. Youdeowei, A. E. F. C., & Onazi, C (1986). *Introduction to tropical agriculture* London: Longman Group Ltd.

THE NATURAL ENVIRONMENT

CONTEXT

This programme is developed to train teachers who could teach students to appreciate and solve the emerging environmental and social issues that negatively affect our communities. These issues are grounded within the social, economic and political spheres. Many of these issues are as a result of certain misconception and attitudes that negatively affect our communities. This programme is, therefore, design to equip teacher-trainees with the appropriate knowledge, skills and values to enable them to assist learners to live well as responsible citizens who have adequate knowledge on the social, economic and political issues in Ghana.

<table>
<tr><td>Course Title</td><td colspan="7">The Natural Environment</td></tr>
<tr><td>Course Code</td><td>EBS 159</td><td>Course Level:</td><td>100</td><td>Credit Value:</td><td>3</td><td>Semester</td><td>2</td></tr>
<tr><td>Pre-requisite</td><td colspan="7">Successful completion of the introduction to social studies course</td></tr>
<tr><td>Course Delivery Modes</td><td>Face -to - face [1] *</td><td>Practical Activity [2] *</td><td colspan="2">Work-Based Learning [3]</td><td>Seminars [4]</td><td>Independent Study [5] *</td><td>e-learning opportunities [6]</td><td>Practicum [7]</td></tr>
<tr><td>Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)</td><td colspan="7">This course is designed to introduce social studies teacher-trainees to the complex form and nature of the natural environment. Firstly, the course sheds light on non-living things occurring naturally. The major scholarly underpinnings regarding the formation of the earth as well as the myriad of life that exist on it would be given priority. The course will also draw much attention to the types of natural environment. The nature theory and its connection with the natural environment will be examined. NTCEF; NTS 1 b p 12, 2 b and 2 c p 13</td></tr>
<tr><td rowspan="4">Course Learning Outcomes [8]: including INDICATORS for each learning outcome</td><td colspan="3">Outcomes:
By the end of the course, the students should be able to:</td><td colspan="4">Indicators:</td></tr>
<tr><td colspan="3">1) Explain the physical principles and structure of the natural environment NTCEF; NTS 2 b, 2 c p 13</td><td colspan="4">1) Explain the physical principles and structure of the natural environment</td></tr>
<tr><td colspan="3">2) Examine the ways natural environment controls human beings NTCEF; NTS 2 b, 2 c p 13</td><td colspan="4">2) Examine the ways the natural environment controls human beings</td></tr>
<tr><td colspan="3">3) Explain the major types of rainfall NTCEF; NTS 1 b p 12, 2 b and 2 c p 13</td><td colspan="4">3) Explain the major types of rainfall</td></tr>
</table>

	4) Apply the nature theory in explaining natural environment NTCEF; NTS 1 b p 12, 2 b and 2 c p 13			**4)** Apply the nature of theory in **explaining** the natural environment
	5) Implement basic techniques used for the analysis of processes and structure of the physical environment NTCEF; NTS 1 b p 12, 2 b and 2 c p 13			
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1.	The environment	1. Meaning of environment 2. Environmental determinism vs. Environmental possibilism 3. Types of environment 4. The importance of the natural environment	1. Teacher guides students to discuss the meaning of environment 2. Teacher the lecture method to distinguish environmental determinism and positivism
	2.	Theories of Natural environment	1. The Nature theory 2. Connection between nature theory and natural environment	1. Teacher discuss the natural theory with students 2. Students brainstorm on how to establish the connection between the natural theory and the natural environment
	3.	Environmental problems	1. Activities that pollute the environment 2. Land degradation 3. Government response to environmental degradation 4. Social studies curriculum response	1. Teachers role-play activities that pollute the natural environment 2. Teacher uses the inquiry method to guide students discover how social studies curriculum respond to

			to environmental problems	environmental problems
	4.	Ecosystem	1. Understanding ecosystems 2. Ecosystem degradation Resource utilisation	Teacher guides students to discuss the ecosystem
	5.	The structure of the earth	1. The earth and its natural occurrence 2. Rocks 3. Highlands and lowlands 4. Water bodies Global climates and climate change	Teacher employs the demonstration method the help students understand the structure of the earth
	6.	Environmental ethics: issues and possible Solutions	1. Resource consumption patterns and the need for their equitable utilisation 2. Preserving resources for future generation 3. The rights of animals 4. The ethical basis of environmental education and awareness 5. The conservation ethics and traditional value system in Ghana	1. Teacher discusses the ethical basis of environmental education and awareness with students 2. Teacher groups students. He uses the project method to guide students to investigate the conservation ethics and traditional values system in Ghana.
Course Assessment Components[9] :	**Component 1**: Formative assessment Summary of Assessment Method: Quizzes and assignment Weighting: 20%			

(Educative assessment of, for and as learning)	Assesses Learning Outcomes: CLO 1, 2 and 3 (units 1 - 3)
Component 2	**Component 2**: Formative assessment Summary of Assessment Method: Quizzes and assignment Weighting: 20% Assesses Learning Outcomes: CLO 4, 5 and 6 (units 4 - 6)
Component 3	**Component 3**: Summative assessment Summary of Assessment Method: End of semester examination Weighting: 60% Assesses Learning Outcomes: CLO 1, 2, 3,4, 5 and 6 (units 1 - 6)
Instructional Resources	Textbook, TV set, Computer, internet facility
Required Text (core)	Kanakam, B., Atta, K. I. (2016). Physical and social relations in social studies. Cape Coast: Hampton Pres
Additional Reading List [10]	African Social and zenvironmenta Studies Programme [ASESP] (1990). *Curriculum and teaching resources book for Africa*. Nairobi: ASEP. Ahwiren, N. (2008). *Social studies for senior High schools*. Accra: Afram publications. Ayertey, I. (2002). *Mastering social studies for senior high school* (combined ed.). Accra: Excellent Publishing. Dadzie, E. T., & Adoma, A. R. (2004*). Environmental and social 2.* Accra: Ghnna Education Service. Ghna Education Service (GES]. (1987). *The social studies syllabus for JSS*. Accra: Curriculum Research and Development Division. Gyekye, K. (2008*). Social studies for West African senior school certificate*. Accra: Sankofa Publishing Company ltd.

Course writing specification

AFRICAN TRADITIONAL RELIGION

CONTEXT

Ghana is a pluralistic nation that allows people with different worldviews to co-exist and contribute towards nation building. There are many religions that are practiced in Ghana. However, the three major ones are Christianity, Islam and African Traditional Religion. The introduction of African Traditional Religion in the basic schools will promote religious tolerance among people. This will help to erase certain misconceptions that non-practitioners of Islam will have about that religion, so as to create social harmony.

<table>
<tr><td>Course Title</td><td colspan="7">African Traditional Religion</td></tr>
<tr><td colspan="2">Course Code EBS 128</td><td colspan="2">Course Level 100</td><td colspan="2">Credit Value 3</td><td colspan="2">Semester: 2</td></tr>
<tr><td>Pre-requisite</td><td colspan="7">Student-teachers must have exposure to the three major religions in Ghana, namely Christianity, Islam and African Traditional Religion either through study or practice.</td></tr>
<tr><td>Course delivery Modes</td><td>Face-to-face</td><td>Practical Activity [x]</td><td>Work-Based Learning</td><td>Seminars</td><td>Independent Study [x]</td><td>e-learning opportunities</td><td>Practicum</td></tr>
<tr><td>Course Description for significant learning</td><td colspan="7">This course is designed to equip students with the content knowledge required for effective teaching of topics African traditional religion at the basic level of education. It examines the cultural, historical and social backgrounds of these topics, and how they impact on the spiritual and moral development of young people. (NTECF, NTS 1a, e, 2c,)</td></tr>
<tr><td>Course Learning Outcomes</td><td colspan="3">Outcomes</td><td colspan="4">Indicators</td></tr>
<tr><td rowspan="2"></td><td colspan="3">1. Identify key topics in the African Traditional Religion in the RME Syllabus. (NTS 1a, e, 2c)</td><td colspan="4">1.3 Explain key concepts and terminologies like Fetishism, Animism, Polytheism, Monotheism and Totemism associated with African traditional religion.</td></tr>
<tr><td colspan="3">2. Demonstrate knowledge and understanding of the various approaches to the study of West African Traditional Religion. (NTS 2c, e, f)</td><td colspan="4">2.1 Explain the Historical, Thematic, Comparative and Enumerative Approaches to the study of ATR.</td></tr>
</table>

	3. Demonstrate knowledge and understanding of the role of religious personalities in African Traditional Religion. (NTS 2c, e)			3.1 Examine the functions of religious personalities like (i) Priests / /Priestesses, (ii) Medicine men /women (Herbalists), (iii) Diviners, (iv) Medium.
	4. Engage positively with people of the community thr worship as part of their professional practice. (NTS 1e)			4.1 Describe the following components of worship in ATR: (i) Prayer/Libation, (ii) Sacrifice, (iii) Offering.
	5. identify conflict management strategies that will enh the professional practice of student-teachers. (NTS 3c, g)			5.1 Explain the following conflict management strategies used in ATR: (i)Negotiation (ii) Mediation (iii) Arbitration (iv) Adjudication (v) Reconciliation
	6. demonstrate knowledge and understanding of disease management strategies that could be used for the benefit of people in the community (NTS 3b, c)			6.1 Explain the following disease management strategies used by African Traditional Religious practitioners: (i) Use of concoction (ii) Use of tinctures (iii) Use of infusion (iv) Use of ointment
Course Content	**Units**	**Topic**	**Sub-Topics**	**Teaching and Learning activities to achieve learning outcomes**
	1	**Characteristics and Sources of African Traditional Religion**	• **Characteristics** ▪ No Founder ▪ No date of Origin ▪ Based on Oral tradition ▪ Not a missionary Religion ▪ No Sacred Writings • **Sources of Study of African Traditional Religion**	▪ **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in ATR. ▪ **Assignment**: Tutor gives assignment to students to find the characteristics of ATR. ▪ **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. ▪ **Use of ICT:** Tutor uses Power Point presentation to explain characteristics of WATR. ▪ **Brainstorming:** Tutor uses Brainstorming method to get student-teachers identify the sources of morality in ATR.

			▪ Oral Sources ▪ Non-Oral Sources	
	2	**Structure of African Traditional Religion**	• Supreme Being • Ancestors • Divinities • Charms and Amulets	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand the structure of ATR. • **Assignment**: Tutor gives assignment to students to describe the structure of ATR. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. • **Use of ICT:** Tutor uses Power Point presentation to explain key concepts. • **Brainstorming:** Tutor uses Brainstorming method to get student-teachers explain the structure of ATR.
	3	**Errors of Terminology in African Traditional Religion**	• Fetishism • Paganism • Animism • Totemism • Primitive • Heathenism • Polytheism • Monotheism	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in teaching ATR. • **Assignment**: Tutor gives assignment to students to find the meaning of the key concepts involved in teaching ATR. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. • **Use of ICT:** Tutor uses Power Point presentation to explain key concepts to student-teachers. • **Brainstorming:** Tutor uses Brainstorming method to get student-teachers explain the errors of terminology used in ATR.
	4	**Religious Personalities**	• Priests / Priestesses • Medicine men / women (Herbalists) • Diviners	• **Resource Persons:** Religious personalities are used by tutors as resource persons to share their professional experiences with student-teachers. • **Study Tour:** Tutor arranges for student-teachers to visit a shrine to learn about the work of

			• Medium	traditional priests or priestesses. • **Tutorials**: Tutor uses tutorials to get student-teachers to understand the functions of traditional religious personalities. • **Assignment**: Tutor gives assignment to students to find the meaning of the key concepts involved in teaching ATR. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. • **Brainstorming:** Tutor uses Brainstorming method to get student-teachers identify the types of religious personalities in ATR.
	5	**Approaches to the Study of African Traditional Religion**	• Thematic Approach • Historical Approach • Comparative Approach • Enumerative Approach • Unitary Approach • Phenomenological Approach	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in the teaching of ATR. • **Assignment**: Tutor gives assignment to students to find the various approaches to the study of ATR. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. • **Use of ICT:** Tutor uses Power Point presentation to explain the various approaches.
	6	**Components of Worship**	• Prayer • Libation • Sacrifice • Offering	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in teaching African Traditional Worship. • **Assignment**: Tutor gives assignment to students to find the meaning of the key concepts involved in teaching ATR. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. • **Use of ICT:** Tutor uses Power Point presentation to explain key concepts involved in traditional

				worship.
	7	**The Concepts of "Man"**	• Man as a physical being • Man as a spiritual being • Man as a social being	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in teaching ATR. • **Assignment**: Tutor gives assignment to students to find the components of the human personality. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. • **Brainstorming:** Tutor uses Brainstorming method to get student-teachers identify the components of human personality.
	8	**Conflict Management and Prevention in African Traditional Religion**	• Causes/Sources of Conflict • Traditional Institutions that Resolve Conflicts • Effects of Conflict • Conflict Prevention • Conflict Management or Resolution	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in teaching conflict management and resolution. • **Assignment**: Tutor gives assignment to students to find the meaning of the key concepts involved in teaching conflict management and revolution. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. • **Use of ICT:** Tutor uses Power Point presentation to explain key concepts. • **Brainstorming:** Tutor uses Brainstorming method to get student-teachers identify the sources of conflict.
	9	**Disease and its Management in African Traditional Religion**	• The Concept of "Health" • Theories of Causation • Types of Disease • Disease Management	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand key concepts involved in disease management. • **Assignment**: Tutor gives assignment to students to find the meaning of the key concepts involved in teaching disease management. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform.

				• **Use of ICT:** Tutor uses Power Point presentation to explain key concepts. • **Brainstorming:** Tutor uses Brainstorming method to get student-teachers identify types of diseases and their possible causes.
	10	**Stress Management in African Traditional Religion**	• The Concept of "Stress" • Types of Stress • Causes of Stress • Effects of Stress on the individual • Stress Management	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand the concept of stress and its management. • **Assignment**: Tutor gives assignment to students to find the causes and effects of stress on the individual. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. • **Use of ICT:** Tutor uses Power Point presentation to explain key concepts. • **Brainstorming:** Tutor uses Brainstorming method to get student-teachers identify the causes of stress.
	11	**Religion and Urbanization**	• The Concept of "Urbanization" • Causes of Urbanization • Effects of Urbanization	• **Tutorials**: Tutor uses tutorials to get student-teachers to understand the concept of urbanization. • **Assignment**: Tutor gives assignment to students to find the causes and effects of urbanization. • **Group Work:** Tutor puts student-teachers into groups and assigns them tasks to perform. • **Use of ICT:** Tutor uses Power Point presentation to explain key concepts. • **Brainstorming:** Tutor uses Brainstorming method to get student-teachers identify the causes and effects of urbanization.

Course Assessment Components (Educative assessment of, for and as learning)	**Component 1:** Formative Assessment (Individual and Group Presentation) Summary of Assessment Method: Individual and Group Presentations to assess student-teachers' Subject and Curriculum Knowledge (SCK) Weighting: 30% Assesses Learning Outcomes: CLO 1, CLO 2, CLO 3, CLO 4, CLO 5, CLO 6 **Component 2:** Formative Assessment (Quizzes and Assignments) Summary of Assessment Method: Quizzes and Assignments to assess student-teachers' Pedagogical Knowledge (PK) Weighting: 30% Assesses Learning Outcomes: CLO 1, CLO 2, CLO 3, CLO 4, CLO 5, CLO 6 **Component 3:** Summative Assessment (End of Semester Examination) Summary of Assessment Method: End of Semester Examination is conducted to assess student-teachers' learning outcomes in the development of critical thinking and creativity skills. Assessment will be based on student-teachers' Subject and Curriculum Knowledge (SCK), Pedagogical Knowledge (PK) and Professional Practice (PP). Weighting: 40% Assesses Learning Outcomes: CLO 1, CLO 2, CLO 3, CLO 4, CLO 5, CLO 6
Instructional Resources	• African Traditional Religion reading material such published books. • African Traditional religious objects such as calabash, whisk, cowries, etc • African Traditional Religious sites such as shrines, grooves and sacred places • Resource Persons • Audio, Visual and Audio-visual materials
Required Text	Asare-Danso, S. (2005). The traditional approach to the management of diseases in Ghana. *Legon Journal of Sociology*, *2* (2), 69-80. Appiah-Kubi, K. (1999). *The Akan of Ghana, West Africa: A cultural handbook for reference.* Bloomfield: Cow Press. Idowu, E. B. (1991). *African traditional religion: A definition.* Lagos: Fountain Publications. Magesa, L. (2001). *African religion: the moral traditions of abundant life*. New York: Orbis Books. Mbiti, J. S. (1997). *African religions and philosophy*. London: Heinemann. Mbiti, J. S. (1997). *Concepts of God in Africa*. London: SPCK. Olupona, J. K. (ed.) (1991). *African traditional religions in contemporary society*. New York: Pragon House. Opoku, K. A. (1978). *West African traditional religion*. Singapore: FEP.

ATHLETICS FOR BASIC SCHOOLS

CONTEXT

Physical education helps students to develop the skills, knowledge, and competencies to live healthy and physically active lives at school and for the rest of their life. They learn 'in, through, and about' movement, gaining an understanding that movement is integral to human expression and can contribute to people's pleasure and enhance their lives. This course therefore seeks to empower trainees to participate in physical activity and understand how this influence their own well-being and that of their prospective students. By demonstrating the benefits of an active life style, they encourage others to participate in sport, dance, exercise, recreation, and adventure pursuits. Physical education engages and energises students. It provides authentic contexts in which to learn. In this course students are challenged to develop their physical, professional and interpersonal skills. This course will enable students to experience movement and understand the role that it plays in their lives and that of their prospective students. Students can contribute to the development of physical education programmes and choose their own level of participation. The resulting learning environment challenges their thinking and helps to promote an interest in lifelong leisure and recreational pursuits.

Course Title	**Athletics for Basic Schools**						
Course Code	**EBS 129**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**2**
Pre-requisite	**Student teacher have knowledge in** athletics from Senior High School						
Course Delivery Modes	**Face -to -face [1] (√)**	**Practical Activity [2] (√)**	**Work-Based Learning [3] (√)**	**Seminars [4](√)**	**Independent Study [5]**	**e-learning opportunities [6]**	**Practicum [7] (√)**
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This course introduces students to running, jumping and throwing activities. Techniques and performance rules of the activities will be taught. Activities to be covered include those listed in the school syllabus, focusing on sprinting, long and high jump, relay racing and shot put. The course also includes discussions on how to create interesting class activities for basic school students using modifications of these activities. **NTS 1a pg 12, 2c,d,e,f pg 13, 3b,c,e,g,i,j,k,l,m pg 14 and NTECF requirements.**						
Course Learning Outcomes [8]: including INDICATORS for	**On successful completion of the course, student teachers will be able to:**				**Indicators**		
	CLO 1. Demonstrate Knowledge and understanding of designing developmentally appropriate athletics				Develop: 1.1 fundamental movements for children		

each learning outcome	activities for children. **(NTS 2c, pg13, 3d, p.14**)			1.2 basic athletics skills for children
	CLO 2. Demonstrate Knowledge and understanding of how to adapt regular activities to suit different age groups. **(NTS 2c,e,f, pg13, 3i**)			2.1 Identify play activities that relates athletic events. 2.2 Separate activities into difficulty levels to match age groups. 2.3 Progressively merge play activity with the events.
	CLO 3. Demonstrate Knowledge and understanding of how to apply rules to selected athletic events taught. **(NTS 2c, pg13, 3b, pg14**)			3.1 Demonstrate basic knowledge of rules in athletics. 3.2 Identify rules with common preambles. 3.3 Get the understanding of the spirit of the rules. 3.4 Be able to explain the rules.
	CLO 4. Demonstrate Knowledge and understanding of skills in selected athletic events. **(NTS 2a,c, pg13, 3b, pg14**)			4.1 Be able to perform the progressive basic skills in the selected events. 4.2 Demonstrate how to teach these progressive skills from the basics to the end.
	CLO 5. Demonstrate Knowledge and understanding of how to construct throwing sectors. **(NTS 2a,c, pg13, 3b, pg14**)			5.1 Should be able to demonstrate knowledge of construction in from SHS Core Mathematics. 5.2 Should be able to construct scaled down sectors. 5.4 Should be able to transfer the scaled drawing into reality on the field.
Course Content: Athletics for Basic Schools	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	Fundamental Movement and Skills	• Locomotor • Non-locomotor • Manipulative (simple structured activities should be used to teach each of them)	Discussion/Demonstration
	2	Movement	• Starting and finishing shot	Discussion/Demonstration/Practical

		Skills in Running Activities	sprints and distant races • Rules • Techniques involved in both races	
	3	Movement Skills in Jumping Activities	• Broad jump, long jump, triple jump and high jump • Techniques involved in the above events • Rules • How to teach long jump, triple jump and high jump	Discussion/Demonstration/Practical
	4	Relay Races	• Various relay races • Techniques in performing and teaching relay races • Rules	Discussion/Demonstration/Practical
	5	Movement Skills in Throwing Activities(shot put, javelin and discus)	• Basic rules in performing throwing activities • Progressions in teaching • Construction of throwing sectors	Discussion/Demonstration/Practical
Course Assessment Components: (Educative assessment of, for and as learning)	**COMPONENTS 1 & 2 FORMATIVE ASSESSMENTS - 40% AND COMPONENT 3, SUMMATIVE - 60%**			
	Component 1 Formative Assessment Quizzes and Exercises 20% Assesses: CLO 1,2,3,4 and 5 (NTS 1b, 2c, d, e, 3 a, c, h; NTECF 16,20, 45)			
	Component 2 Practical observation, group and individual presentations and analysis of various activities. 20% Assesses : CLO 1, 2, 3, 4 and 5 (NTS 1b, 2c, d, e, 3 a, c, h; NTECF 16, 20 45)			
	Component 3 Summative assessment (End of semester examination on units 1 to 5) 60%			

Instructional Resources	1. Projector and screen 2. Computer (Laptop) for playing back 3. Cones, markers, stop watches, whistles, tape measures, High jump setup, etc.
Required Text (core)	Ammah, J. (2004). *Physical education for the basic school teacher*. Winneba: The Institute for Educational Development and Extension. Karbo, J., Ogah, J. K., & Domfeh, C. (2005). *An introduction to physical education* (Centre for Continuing Education Module, University of Cape Coast). Cape Coast: University Printing Press.
Additional Reading List	Arends, R. (1995). *Learning to teach*. New York, NY: McGraw Hill, Inc. Attah, K. K., & Awuni, W. (2001). *Teaching physical education in basic schools*. Accra: Ministry of Education. Bucher, C. A. (1992). *Foundations of physical education.* New York, NY: C.V. Mosby. Domfeh, C., Attah, K. K., & Ayensu, E. K. (2006). *Teaching physical education: A guide to teachers*. Kumasi: Learners Publishers. Lumpkin, A. (1998). *Physical education and sport* (4^{th} ed.). New York, NY: WCB/McGraw- Hill. Ogah, J. K. (2010). Developing and promoting active lifestyles for healthy living and national development. *West Africa Journal of Physical & Health Education*, *14*, 47-70. Ogah, J. K. (2009). *A basketful of health and safety for the early childhood environment.* Paper presented at the National Conference on Early Childhood Education. University of Cape Coast. December 16-17, 2009. Sue, R. W. (1994), *Essentials of nutrition and diet therapy* (6^{th} ed.). St Louis: The C.V. Mosby Company. Wuest, D. A., & Bucher, C. A. (2001). *Foundations for physical education and sport*. Boston: WCB/McGraw Hill.

NATURE OF THE PERFORMING ARTS

Context

The Ghanaian child is born into a society in which the Performing Arts play a very pivotal role. Apart from entertainment the arts serve as a social barometer measuring the pressures exerted by the everyday lived experiences of Ghanaians. The Performing Arts is the total expression of Ghana's culture. From infancy the Ghanaian child is exposed to music, dance and drama as social phenomena. A study of the Performing Arts will expose students to the uses and functions of the Performing Arts in the social, economic, political and religious lives of Ghanaians. It will enable students to explore the meanings of music, dance and drama in everyday life and their roles in the formation of social identities. Furthermore, it will help students to understand the influences of the Performing Arts on society as well as the influences of society in the changing trends of the Performing Arts. Apart from enabling students to develop a *feelingful reaction* to the Performing Arts it enhances and develops creativity among students and introduces them to career opportunities in music, dance and drama. The role of the Performing Arts in the development of the cognitive, emotional and psychomotor domains has received universal recognition. A study of Performing Arts by trainee students will equip them with skills, content and knowledge to impart same to pupils in the basic schools. It will also prepare them for careers and further studies in the Performing Arts.

Course Title	**Nature of the Performing Arts**						
Course Code: EBS 154	**Course Level: 200**		**Credit Value: 3**		**Semester: 2**		
Pre-requisite	Students should have taken the course 'The Performing Arts and Society'						
Course Delivery Modes	Face - to - face [1] √	Practical Activity [2] √	Work-Based Learning [3] √	Seminars [4] √	Independent Study [5] √	e-learning opportunities [6] √	Practicum [7] √
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	The course introduces students to the elements of the three main components of the Performing Arts (Music, Dance and Drama). Students are exposed to the similarities as far as shared elements among the components are concerned; explaining in part, why these components are usually tagged under the Performing Arts. The elements that help to distinguish them are also highlighted. Once students become fully aware of the elements, they are given an insight into how these various elements are put together to create the components of music, dance and drama. The course encompasses the pillars of Skill, Knowledge and Content in addition to addressing the following among others: **NTECF, NTS 1b, 1e, 1f, 2b, c, d, 3a, e, 3i**						
Course	**Outcomes**			**Indicators**			

Learning Outcomes [8]: including INDICATORS for each learning outcome	1. Develop skills of discriminatory listening and observing (NTS 1b, 2c, d, 3k)			1. Show heightened skills in perception and conceptualization.
	2. Appreciate the expressive qualities of the Performing Arts (NTS 1b, 2c, d, 3k)			2. Describe what makes the components of the Performing Arts expressive
	3. Appreciate the relationship between different elements of music, dance and drama (NTS 1b, 2c, d)			3. Show the interplay of the elements of Music, Dance and Drama
	4. Show the similarities and differences between the components of the Performing Arts by the elements they share (NTS 1b, 2a, b, d)			4. Identify similarities and differences between the components of the Performing Arts by looking at the elements.
	5. Develop creative abilities through interaction with the elements of music and dance (NTS 2c, d, 3k)			5. Create simple songs, choreographed dances or direct short plays by combining their respective elements.
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	Elements of music	a) Rhythm b) Pitch and pitch notation c) Tone color/timbre d) Texture • Homophonic • Polyphonic e) Dynamics • Tempo • Intensity f) Form and structure • Binary • Ternary • Call and Response • Cantor and Chorus • Rondo • Sonata	Teacher leads students to discuss the various elements of music and illustrate with practical activities. Examples • Clapping to the syllables of known songs or playing patterns on drum for rhythm • Tonic solfa and the movable 'doh' for pitch • Playing examples of homophonic and polyphonic songs for texture • Playing typical songs (audio or video) that illustrate the other elements such as dynamics and form.

			• Through composed	
	2	Elements of dance	a) Space • Aerial • Ground b) Movement • Locomotor • Non-locomotor c) Gestures • Ritual gestures • Social gestures • Emotional d) Costume e) Energy f) Balance Dynamics	a) Students observe a dance piece and teacher leads them to discuss the elements of dance. b) Teacher plays back or demonstrates specific portions that illustrate each of the elements of dance mentioned
		Elements of drama	a) Plot b) Theme c) Characters d) Diction e) Dialogue f) Spectacle (costume, make-up, lights, sound and other technical elements) Convention	c) Students watch a short piece of drama and teacher leads them to discuss the elements of drama.
	3	Creative explorations	Combining elements of music, dance or drama	Teacher then leads students to discuss the similarities and differences in the elements of the components of the Performing Arts. Teacher leads students to explore the combinations of different elements and create short music, dance or drama pieces.
	4	Performance Studies	Ensemble and solo instrument study a) Ensemble work (music, dance	Students join music, dance or drama groups and learn pieces for performance

			or drama) b) Solo work	Students select one music instrument for study.
Course Assessment Components[9] : (Educative assessment of, for and as learning)	Assessment is made up of two major sections: Formative (40%) and Summative (60%). The formative assessment is further divided into two components with equal weightings: Theory and Practical. **Component 1: Theory (Exercises, Quizzes and Assignments) – 20%** a) With reference to their elements, discuss the similarities and differences between the components of the Performing Arts (CLO 1,2,3 &4: NTS 1b, e, f, g, 2c, d, e) **Component 2: Practical (Portfolio assessment) – 20%** In assigned groups, students combine the elements of music, dance or drama to create a piece of about 20 mins long to be performed. They keep a folder in which anecdotal records of progress, challenges, innovations and so on are recorded. The teacher meets them periodically to discuss these anecdotes and to chart common strategies for improving their performances. These anecdotes are collected in the end and scored. c) Students put up their performances in groups and the class discusses each performance (CLO 4 & 5: NTS 2c, d, 3k) **Component 3: Summative Assessment – 60%** This will be made up of 20 objective questions (20 marks) and two essays (20 marks each) set by the teacher to cover all aspects of the CLO. NTS 1b, 1e, 1f, 2c, 3e, 3i)			
Instructional Resources	Required reading text, pre-recorded audio/video of music, dance and drama, Laptop or audio-visual playing device, internet access, music instruments			
Required Text (core)	Agawu, K. (2001). *Research in African Literatures: An African Understanding of African Music*. Indiana University Press. Amuah, I.R., Adum-Attah, K., and Arthur, K. (2005). Music and dance for colleges of education: Principles and me*thods*. Kumasi: Yaci Publications.			
Additional Reading List [10]	Agawu, K. (2003). Representing African Music: Postcolonial Notes, Queries, Positions. Routledge Hutchinson, Ann (1970). Labanotation. New York: Theatre Arts Books. Manford, R., Wilson, C.B. and Flolu, J.E. (1993). Music for Senior Secondary Schools. Bombay: H. Gangaram & Sons. Mensah, I.T. (1996). Understanding Music.Vol. 1, 2, 3 4. Otuam: Otuamic Publishers. Nketia, J.H.K. (1973). *Folk Songs of Ghana*. Accra: Ghana Universities Press.			

LITERATURE IN ENGLISH II – STUDIES IN POETRY

CONTEXT

The goal of the course is to sustain an unwavering focus on developing knowledge, skills, pedagogy and essential understanding required of a good English teacher to teach English Language and Literature in English from Early Childhood through to the Junior High School in Ghana. The course is to equip the student-teacher with an understanding of contemporary theories, concepts and practices in English Studies and teaching in enhancing literacy. The English courses introduce the student-teacher to the basics of language acquisition skills as well development strategies. The skills: listening, speaking, reading and writing, are given premium throughout the student-teacher's training. These skills are crucial for their academic endeavours, which they will further impart to the Ghanaian child. Though the current teacher training curriculum addresses it, intensifying it comes with numerous advantages to all stakeholders of Ghanaian education. The courses are designed in a manner that the sub-disciplines complement one another. There are ICT components imbedded in the teaching-learning activities to facilitate interactive and learner-focused approach. There is a symbiotic approach in the training of the teachers; as the trainees acquire these skills for personal use and also impart to the students.

The detailed course descriptions and objectives pay attention to the individual courses and attempt to draw synergy from "The National Teacher Education Curriculum Framework" and "National Teachers' Standards for Ghana Guidelines". The assessment portfolios would pay heed to Bloom's Taxonomy of higher level questioning.

Course Title	**Literature in English II – Studies in Poetry**						
Course Code	**EEC 149**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**2**
Pre-requisite	Students have been introduced to poetry both in on this programme and senior high school						
Course Delivery Modes	**Face -to - face [1]**	**Practical Activity [2]**	**Work-Based Learning [3]**	**Seminars [4]**	**Independent Study [5]**	**e-learning opportunities [6]**	**Practicum [7]**
Course Description for significant	The focus of this course is the nature of poetry. It will discuss the various characteristics of poetry including form, structure and function, types of poetry, the tropes etc. Other elements to be discussed include imagination, beauty, emotion and perception. Illustrative material will be drawn from Ghanaian, African and non-African texts, as well as						

learning (indicate NTS, NTECF, BSC GLE to be addressed)	poems written by both male and female poets, bearing in mind the level of the target students. The mode of delivery will be discussion, audio/visual, group work, classroom observation and individual work. The course will be assessed through quizzes, group presentations, report writing and examinations. The course is in line with both NTECF, NTS (1a, b, 2c, d, e, 3o)			
Course Learning Outcomes [8]: including INDICATORS for each learning outcome	**Outcomes** Upon successful completion of this course, students should be able to:			**Indicators**
	1. identify the formal properties of poetry (NTS 2c)			1.1 discuss properties of poetry. 1.2 Identify the formal properties of poetry.
	2. examine the conventions of the poetry genre. (NTS 2c)			2.1 discuss the conventions of poetry using some selected poems.
	3. establish themes found in a poem (NTS 2c, 3e)			3.1 discuss the themes used in various poems and establish these, backing them up with sound argument. 3.2 discuss and establish the themes of other unseen poems.
	4. Perform an analysis of poems (NTS 2c, 3e)			4.1 analyse poems using relevant previous knowledge on poems.
	5. Write poems and share with colleagues.			5.1 write personal poems.
	6. Write a report on observation of a poetry lesson. (NTS 1a, b, 2c, e)			6.1 observe poetry lessons in the basic school and write reports on them.
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	1.Introduction to Poetry	1. What is poetry?	Identify and discuss the formal properties of poetry. Review oral poetry and its features

	2	Types of poetry	2.Oral and written poetry a. oral poetry b. What is oral poetry? c. written poetry What is written poetry?	Discuss what the written poetry is. Guide students to show the difference Discuss the three types of poetry Discuss the conventions of lyric poetry using some selected poems.
	3	Study selected poems	3. What is difference between oral and written poetry? 1. Types of poetry Lyric poetry a. Sonnet - types of sonnet – Shakespearean, Petrarchan, etc. - characteristics of sonnets b. Other types of lyric poetry - Elegy - Haiku - Ode Epigram 2. Narrative poetry a. Ballad - types of ballad – folk ballad, literary ballad - characteristics of ballads b. Epic	Discuss the major features of the types of sonnet Discuss the structure and themes of the sonnet Discuss the characteristics of other lyric poems and establish their thematic concerns. Discuss the narrative poems highlighting the defining characteristics Analyse the ballad Task students to share any traditional epic poem they know Discuss the features of dramatic poetry. Use sample text for discussion Discuss samples the types of poems based on these

			- folk epic Literary epic 3.Dramatic poetry a. Soyinka b. Rubadiri 4.Elements of poetry a. theme(s)/subject matter b. related ideas c. message d. diction e. technique f. imagery i. simile, ii. metaphor, iii. personification, etc. 5.Personal response	elements poetry. In each of the analysis, focus must be placed on personal response to the poem in content and style 6.1 Observe poetry lessons in the basic school and write reports on them.
Course Assessment Components[9] : (Educative assessment of, for and as learning)	Component 1: Formative assessment (40%) Summary of assessment methods: Class participation (10%); group presentation on the types poetry (10%); Individual assignments- analysis of a poem (10%); and a quiz – short answer questions on poem and literary devices (10%) Assessing Learning Outcomes: 1, 2, 3, and 5. Component 2: Summative assessment: (60%) End of semester examination on units 1 – 3to develop core skills such as knowledge application, personal development and appreciation African creativity. The examination will adopt varied approaches; from short answer questions to essay questions. Assessing Learning Outcomes: 1, 2, 3, 4 and 5.			
Instructional Resources				
Required Text (core)	Abbs, P. & Richardson, J. (1990). The forms of poetry: a practical guide. Cambridge: University Press. Minot, S. (1993). *The Three Genres*. New Jersey: Patience Hall.			

Additional Reading List [10]	Dekutsey, W. A. & Sackey J. (2004).*An anthology of contemporary Ghanaian poems*. Accra: Woeli Publishing Services. Mayhead, R. (1981). *Understanding Literature*. Cambridge: C.U.P. Murphy, M. J. (1972). *Understanding unseens*. London: George Allen & Unmwin. Peck, P. (1980). Sounds and silences: Poetry for now. London: Dell Publishing Co. Senanu, K. E. & Vincent T. (1988). *A selection of African poetry*. (2nd ed.). Essex: Longman. Torto R. T. (2014). *General knowledge of literature: Introduction to literary devices, termsand concepts*. (revised edition) Cape Coast: Nyakod Printing Works. Wright, D. (1968). English Romantic verse. London: Penguin Classics.

CREATIVITY AND PERCEPTION

CONTEXT

Visual art education was introduced in the Gold Coast in 1929 by the colonial masters. However, the philosophy and direction of the programme was based on the type of art pertained in Europe which was classical and modern art. Since then, these artistic orientations have dominated art education and practice in Ghana until recently when few proactive individuals in academia and professional practice have decided to redirect the focus of art education and practice in Ghana to conform to current trend of conceptual art practiced across the world. In order to produce visual art teachers to fit into current global trends of art education and practice, it is imperative to introduce them to the philosophy and principles of creativity, perception and conceptual/contemporary art so that it will guide their teaching and practice of art.

Course Title	**CREATIVITY AND PERCEPTION**						
Course Code	**EBS 160**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**TWO**
Pre-requisite	**Basic design and Drawing and Introduction to visual communication**						
Course Delivering Mode	**Face-to-face**	**Practical Activity**	**Work-Base Learning**	**Seminars**	**Independent Study**	**e-learning opportunities**	**Practicum**
Course Description for significant learning (indicate NTS, NTECF, BSC, GLE to be addressed	This course will expose student trainees to the creativity and perception and how they are applied in art. It will also expose students to critical thinking theories and how they are applied in contemporary art. The course will be thought through lectures, class discussions, seminars, individual and group assignments. The course will be delivered through lectures, seminar presentations and discussions. It will be assessed through quizzes, assignments, end of semester examinations, etc. NTECF, NTS p1 1b, le lg: NTSp13 2c, 2e, NTS p 14, 3d, 3e, 3f,						
Course Learning Outcome: including INDICATORS for each learning outcome	**Outcomes** **CLO 1.** Demonstrate basic knowledge and understanding in creativity **Outcomes**			**Indicators** 1. Define creativity 2. State and discuss the qualities of the two main types of creative persons 3. Discuss the elements of the creative environment and how it can be achieved 4. Discuss and examine the creative process 1. Explain the concept of perception			

	CLO 2. Demonstrate knowledge, understanding and skills in perception **Outcomes** **CLO 3.** Demonstrate knowledge and understanding of implications of philosophy and critical thinking in contemporary art **Outcomes** **CLO 4.** Demonstrate knowledge, understanding and skills of conceptual art to produce contemporary artworks			2. Examine how human senses are used to perceive the environment 3. Apply the concept of perception 1. Explain the concept of philosophy 2. Define the scope of philosophy as a field of study 3. Understand basic philosophical theories and principles such as Logic, reasoning and argument 1. Theories and principles of critical thinking 2. Philosophies of contemporary art 1. Apply contemporary art principles to produce artworks
Course Content	**Unit:**	**Topics:**	**Sub-topics:**	**Teaching and learning activities to achieve learning outcomes**
	1	Creativity	1. Concept of creativity 2. Qualities types of creative persons 3. The creative environment 4. The creative process	Unit 1. 1 Lead student s to discuss the concept of creativity Unit 1.2 Lead students to identify the two main types of creative persons and discuss their unique qualities Unit 1.3 Lead students to identify and discuss good environmental factors that can foster creativity in individuals Unit 1.4 Lead students to discuss the creative process. E.g. Incubation period, period of verification etc.

	2	Perception	1. Concept of perception	Unit 2.1 Lead students to discuss the concept of perception and its relevance in art
			2. Human senses used to perceive the environment	Unit 2.2 Lead students to identify the human senses used to perceive elements in the environment and specific elements they are used to perceive. Eyes, Nose, Eyes, Tongue, muscles etc.
			3. Apply the concept of perception	Unit 2.3. Task students to apply their knowledge in the perception process to study objects in the environment and report on their findings. E.g. Natural and man-made objects.
	3	Implications of philosophy on creativity	1. Concept of and scope of philosophy	Unit 3.1. Lead students to discuss and understand the concept and scope of philosophy.
			2. Basic theories and principles of critical thinking such as Logic, reasoning and argument	Unit 3.2. Lead students to discuss and understand the principles of logic, reasoning and argument. Use practical qualitative statements to guide students to analyse logical and illogical statements. E.g. An Eagle is a Bird, An Eagle's egg is a Bird's egg, So an Eagle's egg is a Bird.
	4	Practicing contemporary art	1. Application of principles of conceptual art in contemporary art practice	Unit 4.1 Direct students to relevant reading materials to research into personalities and institutions promoting conceptual and contemporary art practice, analyse their contributions and present the write-up in a seminar session. Unit 4.2.

			1. Importance of contemporary art	Lead students in discussion to identify philosophical principles applied in contemporary art and analyse them. E. g. decontextualization, dematerialisation, deconstruction etc. Unit 4.3. Importance of contemporary art in professional practice, cultural and socio-economic development of developing countries Unit 4.4. Guide students to apply their knowledge and understanding of principles of contemporary art to identify a topical issue in the Ghanaian society and use contemporary approach to do collaborative or independent studio research to emphasis the issue(s) and present their works to class for jury and subsequently display them in a mandatory class exhibition at the end of the semester. *Note: Students must be tasked to develop contemporary art project manifestos that address issues of inclusivity and gender inequality* Unit. 4.5 Students must be tasked to prepare a write-up for their works which should include their manifesto and production processes.
Course Assessment Components (Educative assessment of, for and as Learning)	**Component 1**: **Formative assessment** (Weighting=40%) Quizzes, individual and group written and written assignments=20% seminar presentations and juries=20% **Core skills to be developed**: Critical thinking, creative skills, interpersonal and collaborative skills, writing skills, organisational, presentation skills and research skills Assessing learning outcomes: CLO, 1-4 (Units 1- 4) **Component 2: Summative assessment:** End of semester examination (Weighting = 60%)			

	Part A: Independent/ collaborative studio research: 1. Actual product=30 2. Project write-up=10 Part B: Written examination=20% Total Marks=100% Assessing learning outcomes: CLO, 1-4 (Units 1- 4) **Core skills to be developed**: Critical thinking, creative skills, interpersonal and collaborative skills, writing skills, organisational, presentation skills and research skills
Instructional Resource	Textbooks, journals, ICT tools, computer, Laptop, projector etc.
Required Text (core)	1. Amenuke, S. K. et al. (1999). *General knowledge in art for senior secondary schools.* Accra: Ministry of Education.
Additional Readings	1. Hanfling, Oswald, ed. (1992). *Philosophical Aesthetics.* Cambridge: Blackwell Publishers in association with the Open University. *2.* Chandrasekhar, S. (1987) . *Truth and Beauty: Aesthetics and Motivations in Science.* Chicago: University of Chicago Press. 3. Dember, William N. & Joel S. W. (1979). *Psychology of Perception* (2nd Ed.) New York: Holt, Reinhart and Winston, Inc.

GENERAL PHYSICS THEORY I

CONTEXT

Physics has often been viewed as a difficult subject, and this is an attitude that is engendered by teachers who were not well taught themselves and who are only teaching physics because there is no-one else to do it. The subject is therefore often taught without enthusiasm, together with "dry" content. The curriculum itself doesn't help as it is often not well thought through and much of what we teach in high school is foundational for higher level courses. This means that the more interesting material is often deemed to be too conceptually difficult, especially by those whose main subject interest is chemistry or biology. There are many students in our classes who are doing physics as a means to get into engineering or medical courses. This may be one of the reasons why there is a lack of students studying for science degrees and becoming teachers. If we are to change the downward spiral, we must enable students to see the excitement in physics – the wonder and the amazing possibilities of being able to see how the universe works.
Women are underrepresented in science, especially in physics education. Most leakage from the STEM career "pipeline" occurs in high school and in the transition from high school to college, not in college. Most students who do not/cannot take high school physics never enter the pipeline. Engaging, well-prepared physics teachers are critical to providing capable students and especially women with the confidence and interest to pursue STEM degree programs. Poor initial physics experiences can dissuade and demoralize. Highly qualified physics teachers tend to be hired by established boarding schools our big cities, not by districts in our inner cities and rural areas. Inequality of opportunity in physics education contributes to inequality in college and career outcomes. In this course, assessment techniques and pedagogical practices that improve women and girls' knowledge, attitude and participation in science would be employed.

The Purpose of the Laboratory

Physics is an experimental science. The theoretical concepts and relationships introduced in the lecture part of the course describe the general nature and behavior of real phenomena. They were, appropriately, discovered by (or inducted from) careful observation and thoughtful analysis of actual experiments. Genuine understanding entails being able to relate the abstract ideas to the particular facts to which they correspond. The premise of the scientific method is that (observation of) nature is the ultimate judge of the truth of any physical theory. Indeed, experiments designed to prove certain ideas have often ended up showing them to be wrong. Consequently, all physical concepts must be verified experimentally if they are to be accepted as representing laws of nature. The laboratory is not a contest whose object is to get the "right answer." The purpose is to learn how to gain knowledge by looking at reality, not an attempt to make reality conform to preconceptions. The important thing is to learn how to be observant, to really see what happens, and to deal with this information with the strictest integrity. And to understand, or learn to understand, the meaning of what happens.

Course Title	**General Physics Theory I**						
Course Code	EBS 142	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**2**
Pre-requisite	**Senior High School Physics**						
Course Delivery Modes	Face -to -face [1] ■	**Practical Activity** [2] ☐	**Work-Based Learning** [3] ■	**Seminars** [4] ☐	**Independent Study** [5] ■	**e-learning opportunities** [6] ■	**Practicum** [7] ☐
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This course is intended to introduce students- teacher to some fundamental concepts and principles underlying Physics so as to develop the scientific problem – solving skills and logical reasoning of students. The knowledge acquired is for a later application in the class room. The main topics treated include Physical quantities, Vectors, Dynamics, Kinematics, Thermodynamics, Work, Energy and Power. Understand the Equation: A common problem that is encountered is, the students do not understand the physical meaning of equations. One common example is Newton's second law, F = ma. Students commonly interpret the product of mass and it's acceleration as a force itself. They fail to comprehend that a mathematical equality between two quantities does not imply that the two quantities are conceptually different. Consequentially, they do not appreciate that acceleration is the result of the presence of a net force. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity. (NTECF, NTS 2b, 2c, p13; 3e-3m, 3p; p14;)						
Course Learning Outcomes [8]: including INDICATORS for each learning outcome	Outcomes: Upon successful completion of the course, learners will be able to:				Indicators		
	1. Develop skills of measurement involving the use of different instruments. (NTS 2b, 2c, p13; 3l, 3m, p14)				• Develop learning activities to include direct measurement activities of fundamental and derived quantities to ensure that students spend sufficient time on the basic physics of velocity, distance and time. • Focus on one activity that all students should perform individually while paying attention to learners especially girls with any special needs		

	2. Acquire knowledge and understanding of the concept of density and relative density. (NTS 2b, 2c, p13; 3l, 3m, p14)			• Define density and illustrated the relationship between mass, volume and density • Using measuring cylinder, liquid (e.g. water), cuboid, design a demonstration for determination of density. • Show the relationship between density and relative density.
	3. Identify different types of forces and their applications. (NST 2b, 2c,, p13; 3g, 3j, 3m, p14)			• Describe the nature of forces in terms of: i. Contact forces ii. Field forces • Establish the importance of centre of gravity, equilibrium and stability.
	4. Gain an understanding of the operations of machines. (NTS 2b, 2c, p13; 3f, 3g, 3j, p14)			• Use the pulley system to discuss the properties of machine in terms of: i. Mechanical Advantage (MA) ii. Velocity Ratio (VR) iii. Efficiency (E) • Establish the relationship between MA, VR and E.
	5. Gain an understanding of the universe and explanations of related phenomena. (NTS 2b, 2c, p13; 3l, 3m, p14)			
Course Content	Units	Topics:	Sub-topics (if any):	Teaching and learning activities to achieve learning outcomes
	1.	Measurements	-Fundamental quantities and units -Derived quantities and units -Measurement of length, time, & temperature	• Discuss measurement in terms of i. Physical quantities (fundamental and derived quantities ii. Systems of measurements (FPS,

			-Mass and weight -Dimensional analysis (definition and expression involving quantities; application - deduction of units, derive an equation & check validity of an equation	CGS, MKS & IS system. iii. Rules governing the use of SI units • Discuss dimensional analysis and its applications
	2.	Vectors	-Vectors and scalar quantities -Properties of vectors	• Start by defining the vectors as quantities with magnitude and direction. • Compare these to scalar quantities (magnitude only). • Use class discussion to develop a list of vector and scalar quantities (e.g. vectors: velocity, displacement, force; scalars: temperature, speed, distance, energy) and discuss their properties
	3.	Kinematics	-Simple Harmonic Motion (SHM) -Energy of Simple Harmonic Oscillator -The Pendulum	• There many mathematical aspects in this topics. For students to gain a feel for the characteristics of SHM, set up some large, slow oscillators, such as: i. a very long pendulum ii. a mass on a long vertical spring iii. a trolley or other mass tethered horizontally between springs. • In addition, it will be useful if you can use an **oscilloscope** connected to a slow **signal generator** (frequency 1 Hz) to show a spot moving with SHM.
	4.	Elasticity	-Elastic properties of solids -Elastic limit (Hooke's Law -The Young Modulus -Stress-Strain graghs -Elastic potential energy	**Note:** Many text books simply use x for extension when discussing Hooke's Law, it is helpful to use Dx to avoid confusion later with the original length x when discussing the Young Modulus

	5.	Energy – Work – Power	-Sources, forms, energy transformation -Law of conservation of energy -Work, power -Simple calculation on energy, work and power.	• Design learning activities that will make students learn to think of force as a mechanism by which energy is transferred from one body to another. This only occurs when the force moves in the direction of the force. • Carry out a demonstration on braking distance and velocity
	6.	Fluids mechanic	-Pressure in fluids and buoyancy -Viscosity -Surface tension	
	7.	Kinetic Theory & Heat	-Zeroth Law of Thermodynamics (Temperature and thermal equilibrium) -Thermometer and temperature scales -Calorimetry: heart and internal energy, heat capacity and specific heat, latent heat	• Establish the ideal gas law, and how to use it. • Design activities to introduce energy and change of phase. Also introduce the equation of specific heat capacity *c* (SHC) and define the terms. • Make measurements to calculate a value for specific thermal capacity and consider some of the uncertainties in the measurements you have made.
Course Assessment Components[9] : (Educative assessment of, for and as learning)	A combination of formative and summative assessment including group tasks, quizzes, individual and take home assignment and examination will be used. **Assessment weighting:** **Component 1: Formative assessment** Quiz 1 (CLO 1, 2) 10% Quiz 2 (CLO 3, 4) 10% Group tasks (CLO 7) 10% Individual assignment (CLO 6) 10% **Component 2: Summative assessment** CLO 1-7. 60%			

	Students will be graded as follows: **A**=80-100%; **B+=**75-79%; **B** =70-74%, C+ =65-69%, **C=** 60-64%, **D+=**55-59, **D=**50-54, **E<** 50 (Fail)
Instructional Resources	Computer assisted instruction, Interactive simulations, Smart phones, Google, YouTube, PowerPoint Projections
Required Text (core)	Jewett, J.W. & Sarway, R. A. (2002). *Principles of physics*. (3rd ed.) Harcourt College publishers. Resrucr, R., Halliday, D., & Walker, J. (2010). *Fundamentals of physics.* John Wiley & Sons Inc.
Additional Reading List [10]	Gibbs, K. (2003*). Advanced Physics*. Cambrigde: Cambridge University Press.

GENERAL PHYSICS PRACTICAL I

CONTEXT

Physics has often been viewed as a difficult subject, and this is an attitude that is engendered by teachers who were not well taught themselves and who are only teaching physics because there is no-one else to do it. The subject is therefore often taught without enthusiasm, together with "dry" content. The curriculum itself doesn't help as it is often not well thought through and much of what we teach in high school is foundational for higher level courses. This means that the more interesting material is often deemed to be too conceptually difficult, especially by those whose main subject interest is chemistry or biology. There are many students in our classes who are doing physics as a means to get into engineering or medical courses. This may be one of the reasons why there is a lack of students studying for science degrees and becoming teachers. If we are to change the downward spiral, we must enable students to see the excitement in physics – the wonder and the amazing possibilities of being able to see how the universe works. Women are underrepresented in science, especially in physics education. Most leakage from the STEM career "pipeline" occurs in high school and in the transition from high school to college, not in college. Most students who do not/cannot take high school physics never enter the pipeline. Engaging, well-prepared physics teachers are critical to providing capable students and especially women with the confidence and interest to pursue STEM degree programs. Poor initial physics experiences can dissuade and demoralize. Highly qualified physics teachers tend to be hired by established boarding schools our big cities, not by districts in our inner cities and rural areas. Inequality of opportunity in physics education contributes to inequality in college and career outcomes. In this course, assessment techniques and pedagogical practices that improve women and girls' knowledge, attitude and participation in science would be employed.

The Purpose of the Laboratory

Physics is an experimental science. The theoretical concepts and relationships introduced in the lecture part of the course describe the general nature and behavior of real phenomena. They were, appropriately, discovered by (or inducted from) careful observation and thoughtful analysis of actual experiments. Genuine understanding entails being able to relate the abstract ideas to the particular facts to which they correspond. The premise of the scientific method is that (observation of) nature is the ultimate judge of the truth of any physical theory. Indeed, experiments designed to prove certain ideas have often ended up showing them to be wrong. Consequently, all physical concepts must be verified experimentally if they are to be accepted as representing laws of nature. The laboratory is not a contest whose object is to get the "right answer." The purpose is to learn how to gain knowledge by looking at reality, not an attempt to make reality conform to preconceptions. The important thing is to learn how to be observant, to really see what happens, and to deal with this information with the strictest integrity. And to understand, or learn to understand, the meaning of what happens.

Course Title	**General Physics Practical I**						
Course Code	**EBS 142P**	**Course Level:**	**100**	**Credit Value:**	**2**	**Semester**	**2**
Pre-requisite	**Senior High School Physics**						
Course Delivery Modes	**Face -to -face [1]** ■	**Practical Activity [2]** ■	**Work-Based Learning [3]** ■	**Seminars [4]** □	**Independent Study [5]** ■	**e-learning opportunities [6]** ■	**Practicum [7]** □
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This is the practical component of General Physics Theory I and is assessed separately. It is intended to make Physics as interesting and relevant as possible by investigation some practical applications of physics. Experiments sharpen students' powers of observation, stimulate questions, and help develop new understanding and vocabulary. Practical physics will help all teachers of physics to share their skills and experience of making experiments work in the classroom. The main topics treated include Hooke's Law, Surface Tension, Simple Harmonic Motion, Density Measurement, Calorimetry and Thermal expansion. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity. (NTECF, NTS 2b, 2c, p13, 3a, 3c, 3e-3m, 3p, p14)						
Course Learning Outcomes [8]: including INDICATORS for each learning outcome	Outcomes: Upon successful completion of the course, learners will be able to:					Indicators	
	1. Demonstrate the ability to organize the activities that lead to a successfully completion of scientific investigation. (NTS 2b, 2c, p13, 3a, 3c, 3f, p14)					• Design and carry out the experiment as outlined. • Follow and use the format for laboratory experimental report writing.	
	2. Demonstrate the ability to use technology to collect and analyze experimental data and the ability to extract elements of the physical principles exemplified by the system being studied. (NTS 2b, 2c, p13, 3a, 3c, 3f, 3i, 3j, p14)					• Collect and analyze experimental data using the appropriate technological tools. • Take time to familiarize yourself with each equipment that will be used in the laboratory.	
	3. Demonstrate the importance of safety to the students. Students will participate in Laboratory Safety training and					• Observe all safety rules in the laboratory. • Stay focus and be conscious of	

	complete a form indicating understanding and anticipate compliance. Students will be informed and properly trained to use potentially hazardous equipment or materials encountered in this course. (NST 2b, 2c, p13, 3c, p14)			what you are doing. • Ask when in doubt.
Course Content	Units	Topics:	Sub-topics (if any):	Teaching and learning activities to achieve learning outcomes
	1.	Determination of Modulus of Elasticity	Determine the modulus of elasticity of a given metal	Learners to design and carry out the experiments as required.
	2	Viscosity Measurement with the Falling Ball Viscometer	Determine the viscosity of glycerine.	Learners to design and carry out the experiments as required
	3.	Experiment with Helical Spring	Show that the time of vertical oscillation of a helical spring depends on the load and from your plotted graph determine the effective mass of the spring (m).	Learners to design and carry out the experiments as required
	4.	Determination of Density of Liquids using a Loaded Test-Tube	Determine the density of a given liquid and identify the liquid.	Learners to design and carry out the experiments as required
	5.	Newton's Law of Cooling for a Liquid	Verification of Newton's Law of cooling.	Learners to design and carry out the experiments as required
	6.	The Coefficient of Cubical Expansion Glycerine using Specific Gravity Bottle	Determination of cubic expansion of glycerine.	Learners to design and carry out the experiments as required
	7.	Mathematical Pendulum	1 For small deflections, determine the oscillation period as a function of the cord length.	Learners to design and carry out the experiments as required

			2 Determine the acceleration due to gravity	
	8.	Heat Capacity of Metals with Cobra 3	Determine the specific heat capacity of aluminium, iron and brass.	Learners to design and carry out the experiments as required
	9.	Heat Capacity of Metals	Determine the specific heat capacity of aluminium and steel.	Learners to design and carry out the experiments as required
	10.	Mechanical Equivalent of Heat	Determine the mechanical equivalent of heat.	Students to design and carry out the experiments as required
Course Assessment Components[9]: (Educative assessment of, for and as learning)	Both formative and summative assessment including individual lab report, and end of semester examination will be used. **Assessment weighting:** **Component 1: Formative assessment** This is practical course, students are expected to carry out 10 practical activities and each practical will form part of the **Component 1**. Component 1 will constitute 60% of the course assessment. **Component 2: Summative assessment** One practical examination will be conducted at the end of the semester, this will constitute 40% of the course assessment. Students will be graded as follows: **A**=80-100%; **B+=**75-79%; **B** =70-74%, C+ =65-69%, **C=** 60-64%, **D+=**55-59, **D=**50-54, **E<** 50 (Fail)			
Instructional Resources	Physics Laboratory, Computer/Laptops, Smart phones, Google, YouTube, Lab equipment/apparatus as indicated.			
Required Text (core)	Jewett, J.W. & Sarway, R. A. (2002). *Principles of physics*. (3rd ed.) Harcourt College publishers. Resrucr, R., Halliday, D., & Walker, J. (2010). *Fundamentals of physics.* John Wiley & Sons Inc.			
Additional Reading List [10]	Department of Physics, UCC (2016). Laboratory Manual for General Physics Theory I			

GENERAL CHEMISTRY THEORY 1

SPECIFIC CONTEXT ISSUES:

This course is mounted to equip year 1 student-teacher with basic concepts in in chemistry. The concepts are: the structure of the atom, arrangement of electron in an atom, periodicity, amount of substances and the mole, acids, bases and salt; chemical bonding and the chemistry of carbon 1.

Course Title	General Chemistry Theory 1						
Course Code	**EBS 115**		**Course Level: 100**		**Semester 2**		**Credit value: 2**
Pre-requisite	**Student teachers have knowledge in** elective chemistry at the senior high school level.						
Course Delivery Modes	**Face-to-face: [X]**	**Practical activity: [ ]**	**Work-Based Learning:[ ]**	**Seminars: [ ]**	**Independent Study: [X]**	**e-learning opportunities: [X]**	**Practicum: [ ]**
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	The general chemistry course covers some topics in physical chemistry. The course is for students who have studied elective chemistry at the senior high school level. The course is therefore intended to consolidate and expand on the content students have learnt. Topics studied in this course include the structure of the atom, arrangement of electron in an atom, periodicity, amount of substances and the mole, acids, bases and salt; chemical bonding and the chemistry of carbon 1. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity. **NTECF, NTS 2c, pg.14, 3d,3f, 3i, 3j, 3k pgs.15, and 22**						
Course Learning Outcomes	**On successful completion of the course, student teachers will be able to:**				**Indicators**		
	CLO 1. Demonstrate knowledge and understanding of the concepts of the structure of the atom. **(NTECF, NTS 2c, pg14, 3d, pg15).**				1.1 Describe the structure of the atom in terms of : a) proton, b) neutron and c) electron		

	CLO 2. Demonstrate knowledge and understanding of the arrangement of electron in an atom. **NTECF, NTS 2c, pg14, 3j, pg15).**	2.1 Explain the principle that govern how electrons fill their orbitals. 2.2.Write electronic configuration of each of the first twenty elements of the periodic table using the guiding principles.
	CLO 3. Demonstrate basic knowledge and understanding of the concept of periodicity. **NTECF, NTS, 3i, pg15 & 3j, pg 15).**	3.1 Identify the various categories of elements on the periodic table. 3.2. Explain the basic rule that brought about the various categories of elements on the periodic table.
	CLO 4. Demonstrate knowledge and understanding of amount of substances and the mole concept. **NTECF, NTS 14c, 15i).**	4.1. Determine the amount of substances in aqueous solutions. 4.2 Calculate the number of moles of substances present in a solution of known concentration.
	CLO 5. Demonstrate understanding and knowledge in the concepts of acids, bases and salt. **NTECF, NTS, 3d, pg15 & 3j, pg15).**	5.1. Identify sources of acids, bases, salts 5.2. Use the pH scale to identify acids bases and neutral solutions. 5.3. Give practical example of what acids, bases and salts are used for in their daily life.
	CLO 6. Demonstrate knowledge and understanding of the concept of chemical bonding 1. **(NTECF, NTS 2c pg14, 3i, pg15 &3k, pg 15).**	6.1.Describe how covalent bond and an ionic bond are formed. 6.2. State the main difference between a covalent bond and an ionic bond. 6.3. Identify practical examples and uses of covalent and an ionic compounds in their daily lives.

	CLO 7: Demonstrate knowledge and understanding of the concepts of chemistry of carbon1. **NTECF, NTS 2c, pg14, 3d, pg15 & 22).**		7.1. State the types of hybridisation carbon atom can undergo. 7.2. Determine the empirical and molecular formulae of organic compounds.	
	Units	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes:**
Course Content: General Chemistry Theory	**1**	The structure of the atom and the arrangement of electrons in the atom	- Dalton's Atomic theory and its limitations - The contributions of J.J. Thompson, Rutherford and Bohr"s towards the development of atomic structure - Definition of the following terms: electron, protons, neutron number, atomic number, mass number and isotope - Arrangement of electrons in the main and sub-energy levels of an atom - Orbitals (shapes of *s*, *p* and d orbitals). - Rules and principles for filling in electron (Aufbau Principle, Hund's Rule of Maximum Multiplicity and Pauli Exclusion Principle). electronic configuration in terms of s,	Think-pair-share and running dictation to discuss and explain the basic rules and principle. Animation and simulations of structure of the atom and how electrons are arranged in the main orbitals from YouTube and other online resources. Use game and songs/acronyms to learn about the 1st 20 elements and 'Find someone who can' for the definitions.

			p, and d orbitals from hydrogen to zinc.	
	2	**PERIODICITY**	• The periodic table: - the position of elements in the periodic table • Identification of metals, semi-metals and non-metals on the periodic table. - Identifying the different categories of elements in the periodic table: Metals (alkali metals, alkaline earth metals and transition metals.), semi-metals, and non-metals (halogens, noble gases and other non-metals). • Physical properties of some representative elements. - Physical and chemical properties of some elements: Na, K, Mg, Al, Ca and the halogens. o Hardness, density, melting point, boiling point and state of the alkali, alkaline Earth and the halogens. • The terms *"group"* and '*period.* - Explain the terms "groups" and "periods" of the periodic table.	Use game, animations and simulations from Youtube and other online resources to develop the concepts Concept cartoon, Panel/pyramid discussion for presenting the concepts. Find someone who can' as a strategy for presenting and discussion of the concept 'Group and Periods'.

			- Discuss the similarities in chemical nature of elements in the same group. - Use the following reactions for your discussions: Alkali metals, Li, Na and K with water	
	3	**CHEMICAL BONDING** 1.INTERATOMIC BONDING a. Ionic bond formation • Covalent character in ionic bond. • Name and chemical formulae for simple ionic compounds	a) Bond formation - Formation of Ionic Bonds, ionic compounds and properties - Lewis dot structures for simple ionic compounds - Factors that influence the formation of ionic bond.(ionization energy, electronegativity, lattice energy) - Covalent character in ionic bond. name some binary and ternary ionic compounds from their formulae - Names and chemical formulae for simple ionic compounds including those that contain the polyatomic ions, ammonium, hydroxide, trioxocarbonate(IV), trioxonitrate(V), tetraoxophosphate(V), tetraoxosulphate(VI) and trioxochlorate(V). - Covalent Bonding and properties - Formation of covalent bonds	Using concept mapping to present the concepts (being mindful of equity and inclusivity) Using individual and group presentations (being mindful of gender roles). Videos and animations from known science education sites online. Questions and answers technique can also be employed where appropriate.

		b. COVALENT BOND FORMATION • Lewis dot structures for some covalent compounds. • Polar covalent bonds • Properties of covalent compounds	involving same and different atoms. - Polar and non-polar covalent bonds - Dipole moments - Lewis formulas for molecules and polyatomic ions. - Ionic character (polarity) in covalent bonds based on electronegativity difference between the species involved. - .Discuss properties of covalent compounds under ➢ solubility in polar and non-polar solvents ➢ melting point ➢ boiling point ➢ electrical conductivity - Characteristics of the atoms and groups involved in the formation of metallic bond. - the formation of metallic bond. - Factors influencing the formation of metallic bond and how the factors relate to the hardness and softness of metals - Properties of metals. e.g □ heat and electrical conductivity □ hardness □ ductility □ malleability	

		c. METALLIC BOND FORMATION. The properties of metals 2. INTER-MOLECULAR BONDING Types of intermolecular forces in covalent compounds. Hydrogen bond	- lustre - sonority The different types of intermolecular forces in covalent compounds. Include: - Hydrogen bond - Van der Waal"s forces The structures of the following molecules ; H_2O, H_2S, NH3 ,CH_4 - Formation of hydrogen bond. - The effect of hydrogen bonding on the properties of compounds (e.g. H2O and H2S) Van de Waals forces between and within covalent molecules. ➢ Dipole-dipole ➢ dipole-induced dipole forces ➢ ion-dipole forces Meaning of the term Hybridization. Hybridization of atomic orbitals. sp, sp^2, sp^3, sp^3d^2 orbitals The procedures for hybridizing atomic orbitals. - Formation of sp, sp^2, sp^3, sp^3d^2 hybrid atomic orbitals using carbon atom as an example.	

		Van de Waals • Hybridization and Shapes of Molecules Formation of sigma(□) and (□) pi-bonds. Shapes of molecular compounds	- Sketch the shapes of sp, sp^2 and sp^3 and sp^3d^2 hybrid orbitals using the following molecules: □ CH_4, NH_3, H_2O, , CH □ CH □ BCl_3 , H_2C □ CH_2	
	4	**AMOUNT OF SUBSTANCE AND THE MOLE** Chemical formulae and chemical equations	a) Relative atomic mass , A_r b) Relative molecular mass, M_r c) The mole and molar quantities d) Quantity of solute in solution and preparation of solutions e) Chemical formulae of molecules and ionic compounds f) Naming of inorganic compounds (binary compounds, ions, base and salts) Chemical equations and mole ratios (writing and balancing chemical equations)	Using individual and group presentations Videos and animations from known science education sites online. Questions and answers technique can also be employed where appropriate (being mindful of equity and inclusivity).
	5	**ACIDS BASES AND SALTS**	Sources and classification of acids, bases and salts Arrhenius, Bronsted- Lowry and Lewis acids and bases Physical and chemical properties of acids and bases:	Using concept mapping and cartooning for illustrating and discussing the concepts of acids, bases and salts. Using individual and group presentations

			Provide examples of processes and products that use knowledge of acid and base chemistry, e.g. (1) air pollution analysis (2) food and beverage analysis (3) water quality and environmental analysis (4) in the soap industry (5) acidity of edible oils (6) analysis of antacids Classification of acids and bases: Strength of acids and bases (strong acids and weak aids and alkalis) pH scale and Universal indicator. pH as a measure of acidity and alkalinity. Buffer Solutions Acid-Base indicators Correct use of relevant apparatus. Knowledge of how acid-base indicators work in titrations. Acid-base titration:	Using 'spider web' as a strategy to present the classification of acids and bases. videos and whole class discussion can be used for presenting the concept on pH scale and titration.

			Calculations involving Molarity	
	6	**THE CHEMISTRY OF CARBON 1** • Tetravalent nature of carbon. • Definition and classification of organic compounds. • Components of organic compounds	Bonding and type of hybridization in Carbon (hybrid orbital e.g. sp, sp^2 and sp^3 and discuss sigma (□) and (□) pi-bond formation) Define organic compounds Classification of the following Organic Compounds: i. hydrocarbons (aliphatic and aromatic hydrocarbons) ii. functional group compounds (alcohols, carbonyls, carboxylic acids, ester and amines) Discuss and demonstrate the experimental Identification determination of the elements: C, H, O, N, S and halogens in a given organic compound. Use of a given data to determine the empirical and molecular formulae of organic compounds.	Videos and animations from known science education sites online. Running dictation can be used to present the tetravalent nature of carbon and classification of organic compounds. Group work, discussions and presentations as teaching strategies will be used for Components of organic compounds (being mindful of equity and inclusivity) •

Course Assessment (Educative assessment: of, for and as learning)	**Component 1**: Formative assessment (individual and group presentation) Summary of Assessment Method: Individual and group presentations on i) Intermolecular bonding, ii) Ar, Mr, iii) classification of acids, iv) bases and v) components of organic compounds (core skills to be developed: , digital literacy, respect for diversity, critical thinking, collaboration and communicative skills,) Weighting: 20% Assesses Learning Outcomes: CLO 3, 4 and 6 (units 3, 4, & 6)
Component 2: Formative assessment (Quizzes and Exercises) Summary of Assessment Method: Quiz on atomic structure and periodicity (core skills to be developed: critical thinking and personal development) Weighting: 20% Assesses Learning Outcomes: CLO 1 and 2 (unit 1 and 2)	
Component 3: Summative assessment Summary of Assessment Method: End of semester examination on units 1 to 6 (core skills to be developed: critical thinking, personal development reports on case studies) Weighting: 60% Assesses Learning Outcomes: CLO 1-6	
1. Periodic Tables 2. Projectors and computers **3.** Audio-visuals and animations from YouTube	
Required references	Abbey, T.K., Ameyibor, K., Essiah, J.W., Nyavor, C.B., Seddoh, S. & Wiredu M.B. (1995).*GAST Science for senior secondary school*. London: Unimax Publishers Limited Ameyibor, K., &Wiredu M. B. (1991).*GAST chemistry for senior secondary school*. London: Macmillan Education Limited. Chang, R. (2003). *General chemistry: The essential concepts*. (3rded.). Boston: McGraw Hill.
Additional Reading List	Gallagher, R. & Ingram, P. (1987).*Chemistry made clear*. Oxford: Oxford University Press. Ohia, G.N.C., Amasiatu, G.I., &Ajagbe, J.O. (2005).*Comprehensive certificate chemistry*. Ibadan: University Press PLC. Whitten, K.W., Davis, R.E., & Peack M.L. (2000) *General Chemistry*. (6thed.). Fort Worth: Saunders College Publishing.

GENERAL CHEMISTRY PRACTICAL

SPECIFIC CONTEXT ISSUES

The practical course consolidates and builds on the practical skills students-teachers have acquired at the senior high school level. This is to help them acquire more new skill in hands-on learning and prepare them to meet the requirements needed to teach at the basic level with confidence. As they do the activities individually and in groups, they acquire individual and transferable skills, they become aware of individual differences and manage interpersonal differences. They will also imbibe the skill of report writing and discussions of findings and discoveries in chemistry.

<table>
<tr><td>Course Title</td><td colspan="6">General Chemistry Practical</td><td></td></tr>
<tr><td>Course Code</td><td colspan="2">EBS 115P</td><td colspan="2">Course Level: 100</td><td colspan="2">Semester 2</td><td>Credit value: 3</td></tr>
<tr><td>Pre-requisite</td><td colspan="6">Student teachers have knowledge in foundations of education in Ghana and inclusive school-based inquiry</td><td></td></tr>
<tr><td>Course Delivery Modes</td><td>Face-to face: [√]</td><td>Practical activity: [√]</td><td>Work-Based Learning:[√]</td><td>Seminars: [ ]</td><td>Independent Study: [ ]</td><td>e-learning opportunities:[ ]</td><td>Practicum: [ ]</td></tr>
<tr><td>Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)</td><td colspan="7">In this practical course, students will develop the skills of testing and identifying gases correctly. Students will be introduced to the use of bubbling test, moist paper test, drop test and splint test methods of testing gases. Students will also test for acids and bases and learn to prepare simple indicators. They will learn how to prepare standard solutions as well as solutions of different concentrations through dilution. This course will enable students to use volumetric analysis to estimate quantities of substances in a solution. This will involve single indicator, double and back titrations, as well as calculations. Students will develop practical skills in using different separating methods. They will also learn how identify the presence of anions and cations in solutions. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity.
(NTECF, NTS 2c, 2e, 2f, 3d, 3h, 3n, 3p).</td></tr>
<tr><td>Course Learning</td><td colspan="5">On successful completion of the course, student teachers will be able to:</td><td colspan="2">Indicators</td></tr>
</table>

Outcomes	CLO 1. Demonstrate knowledge and practical skills involved in test for acids and bases and learn to prepare simple indicators from plant parts. **(NTECF, NTS 3h, 3n, 3p).**			1.1.Identify the materials and apparatus needed for testing acids and bases. 1.2. Demonstrate how acids and bases are tested. 1.3. Prepare indicators from flowers.
	CLO 2. Demonstrate knowledge of practical skills in testing and identifying gases correctly (NTS 2c, 2e, 3h, & 3p).			2.1. Identify the materials and apparatus needed for testing acids and bases. 2.2. Testing for gases
	CLO 3. Demonstrate basic practical skills involved in the preparation of standard solutions as well as solutions of different concentrations through dilution. (NTS 2c, 2e, 3d, 3h, & 3p).			3.1 Preparing solutions of different concentration 3.2. Prepare standard solution and solutions of different concentrations through dilution. 3.3. Performing titration to determine the concentration of substance
	CLO 4. Develop practical skills in using different separating methods as well as identify the presence of anions and cations in solutions. **(NTS 2c, 2e, 2f, p.14, 3d, 3h, p. 15)**.			4.1. Separating mixtures 4.2. Identify the presence of anions and cations in solutions.
	Units	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes:**

Course Content: **Psychology of human development and learning**	**1**	Acids and Bases Volumetric analysis	i. Tests for Acids and Bases using indicators. ii. Preparation of indicators from flowers. iii. Practical knowledge of how various acid-base indicators work in titration. iv. Titration involving weak acids and strong bases and strong acids versus strong bases using appropriate indicators and their applications in quantitative determination of concentration. v. Definitions and calculations vi. Double indicator and back titrations Calculations	Using science practical pack Project and investigation Demonstration, Group work Using animations, simulations and other online resources. Using practical activities.
	2	Gases	i. Preparation of the following gasses: carbon dioxide, hydrogen, oxygen, ammonia ii. Use of bubbling test, moist paper test, drop test and	Using science practical pack Project and investigation

			splint test through the following: Test for carbon dioxide, sulphur dioxide, hydrogen sulphide, hydrogen chloride, ammonia, hydrogen, nitrogen dioxide, oxygen iii. Test for water vapour	Demonstration, Group work Using animations, simulations and other online resources. Using practical activities.
	3	a. Preparation of standard solutions b. Determination of concentrations of solution	i. Preparation of acid solutions (e.g. HCI, H_2SO_4) of known concentration. ii. Preparation of alkalis (e.g. NaOH) iii. Preparation of salts solutions (e.g. Na_2CO_3) $NaHCO_3$ etc.) Known concentrations must be expressed in various units. e.g. 0.2M NaOH Solution: 2% NaCl (w/w and w/v solution) etc. Dilution of solutions of known concentration to obtain other concentrations.	Using practical pack Project and investigation Demonstration, Group work Using animations, simulations and other online resources. Using practical activities.
	4	Separation methods	Magnetization, filtration, distillation, evaporation, precipitation, decantation, crystallization and	Using science practical pack Project and investigation

			recrystallization etc.	Demonstration, Group work Using animations, simulations and other online resources. Using practical activities.
Course Assessment (Educative assessment: of, for and as learning)	**Component 1**: Formative assessment (group presentation) Summary of Assessment Method: mixed ability group presentation on preparation of gases, identification of cations and anions, and separation of mixtures. (core skills to be developed: respect for diversity, critical thinking, digital literacy, collaboration and communicative skills, personal development) Weighting: 20% Assesses Learning Outcomes: CLO 2 and 4, (units 2 & 4)			
Component 2: Formative assessment (Test of practical knowledge) Summary of Assessment Method: Test of practical knowledge acid and bases (core skills to be developed: critical thinking, personal development) Weighting: 20% Assesses Learning Outcomes: CLO 1 (unit 1)				
Component 3: Summative assessment Summary of Assessment Method: End of semester examination on units 1 to 3 (core skills to be developed: critical thinking, personal development) Weighting: 60% Assesses Learning Outcomes: CLO 1, 2 and 3 (Unit 1, 2 &3)				

4. Audio-visuals and animations from YouTube 5. Projectors and computers **6.** Appropriate reagents and apparatus **7.** Students practical report books	
Required references	Ameyibor, K., &Wiredu M. B. (1991). *GAST chemistry for senior secondary school*. London: Macmillan Education Limited. Ohia, G.N.C., Amasiatu, G.I., & Ajagbe, J.O. (2005). *Comprehensive certificate chemistry*. Ibadan: University Press PLC. Okonkwo, E.S. (1976). *Certificate practical chemistry*. Accra: FEP International Limited
Additional Reading List	Okonkwo, E.S. (1976). *Certificate practical chemistry*. Accra: FEP International Limited Pavia, D.L., Lampman, G.M. Kriz, G.S., Engel, R.G., A Microscale Approach to Organic Laboratory Techniques, 5th edition, BROOKS/COLE Cengage Learning, US, 2013.

GEOMETRY II

CONTEXT

The mathematics curriculum provides student teachers with a background in the theory and application of the content needed to understand the underlying structure and nature of mathematics. In addition, it exposes student teachers to the content knowledge needed in preparing them sufficiently to teach mathematics beyond what they will be expected to teach at the basic education level. The demands of rapid change in am information- based society today have influenced mathematics programs in various ways. The skills needed for jobs require thoughtful workers who are oriented to problem solving, irrespective of their gender, cultural and socio-economic backgrounds. By studying mathematics, students are taught to reason, to analyze, to think for themselves, while it imparts confidence in their own reasoning powers, and strengthens their mental faculties. Students need to use rules and thought processes of mathematics along with facts, to develop a reasoning pattern that will translate to their everyday lives, making them better thinkers and problem solvers. It is important for students to view mathematics as a significant part of our culture, not only for its valuable scientific applications but also for its enrichment of our cultural life. This mathematics curriculum is, therefore, intended to equip student teachers with the knowledge, skills and values needed to teach mathematics to basic school pupils in everyday life context. Besides, it provides the requisite resource material for preparing student teachers to teach mathematics sufficiently and effectively in our basic schools.

Course Title	**GEOMETRY II**						
Course Code	**EBS 145**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**2**
Pre-requisite	Students have knowledge of basic Geometry in SHS core Mathematics						
Course Delivery Modes	**Face -to -face** [1] ✓	**Practical Activity** [2] ✓	**Work-Based Learning** [3] ✓	**Seminars** [4]	**Independent Study** [5] ✓	**e-learning opportunities** [6] ✓	**Practicum** [7]
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	The course is designed to consolidate and build on students' concepts and skills in Geometry covered at the pre-tertiary level. The course covers Lines and Angles, Polygons, Geometrical constructions, Circles theorems, Co-ordinate geometry, and Measurement of two-and three-dimensional shapes including the application of Pythagoras' Theorem. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity. (NTS 1a, b; 2c).						

Course Learning Outcomes [8]: including INDICATORS for each learning outcome	**Outcomes:** By the end of the course, the student will be able to:			**Indicators:**
	1. demonstrate an in-depth understanding of the concepts and skills related to geometry covered in the course; (NTS 2c)			Exhibit evidence of clear understanding geometric figures and how to use appropriate instruments to construct real life figures (2-and 3-dimensional).
	2. apply the knowledge acquired in the course to solve real life problems, using appropriate procedures and ICT tools such as *Geogebra* and programmable calculators. (NTS 2c)			Show ability to apply the concepts to sole real life problems Exhibit competence in the use of ICT tools such as Geogebra as aid to construct geometric shapes
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	Lines and Angles	Types of angles, parallel and perpendicular lines and transversals.	Guide student to : -identify and name different types of angles formed by intersecting lines -construct and bisect angles and lines -solve problems involving parallel lines and a transversal. -use Geogebra to draw lines and measure angles
	2	Polygons	Properties of polygons, interior and exterior angles of polygons.	Students should use practical activities including use of Geogebra and any relevant ICT tool to identify polygons with their properties and apply the knowledge to solve related problems.
	3	Geometrical constructions	Construction of polygons - triangles, quadrilaterals and regular hexagons using a pair of compasses and a ruler only. Construction of line and angle, bisectors.	Involve students in activities involving the use of mathematical construction instruments construct various angles, polygons and loci. Provide worthwhile real life tasks for students to apply knowledge of construction to solve.

	4	Circles theorems	Properties of a circle - radius, diameter, circumference, arcs, segments, chords and properties of chords. Theorems on chords, segments and tangent.	Involve students in practical activities to establish the relationships between circumference and diameter of a circle and circle theorems. Encourage group work and the use of appropriate TLMs. Provide worthwhile real life tasks for students to apply knowledge of circle theorems to solve.
	5	Co-ordinate geometry	Distance between two points, midpoint of a line segment, length of a line segment, slopes (gradient) of lines, equation of a straight line: joining two points; parallel and perpendicular to a given line through a given point; and bisector of a given line segment.	Engage students collaboratively in activities leading to the derivation of relevant coordinate geometry formulae e.g. finding distance between two given points. Engage students in exploring conditions for parallel and perpendicular lines Cooperative learning groups to be encouraged. Use of **Geogebra** and any other relevant ICT tool is expected.
	6	Measurement in two- and three-dimensional shapes including the application of Pythagoras' Theorem	Development the concept of Pythagoras Theorem. Application of Pythagoras Theorem. Solving real life problems involving two-dimensional shapes, areas of sectors and arc lengths.	Use geoboard or geodot/graph sheets to develop the concept of Pythagoras theorem and apply the theorem to solve related problems in two- and three-dimensional shapes Use of **Geogebra** is expected.
Course Assessment Components[9] : (Educative	**Component 1: Formative Assessment (Individual and Group presentations)** **Summary of Assessment Method:** Critical Thinking, problem solving skills, creative and innovative skills, life-long learning/ personal skills, collaborative/ social skills, communication skills, literacy and numeracy skills, leadership skills, digital literacy/ICT skills (NTECF p. 45**)**			

assessment of, for and as learning)	• Presentations Weighting (10%) Assesses Learning Outcomes: CLO 1 (Units 4 and 6)
	Component 2: Formative Assessment **Summary of Assessment Method:** Critical Thinking, problem solving skills, creative and innovative skills (NTECF p. 45**)** • Assignments • Class exercises • Quizzes Weighting (30%) • Assesses Learning Outcomes: CLO 1 & 2 (Units 1, 2, 3, and 5)
	Component 3: Summative Assessment **Summary of Assessment Method:** End of Semester Examinations Unit 1 – 8 (Core skills to be developed: Critical Thinking, problem solving skills, creative and innovative skills (NTECF p. 45**))** Weighting (60%) Assesses Learning Outcomes: CLO 1 & 2
Instructional Resources	Geoboard/geodot/graph sheets, cut out of various shapes, ICT tools such as *Geogebra* and programmable calculators.
Required Text (core)	Martin, J. L. (1994) *Mathematics for teacher training in Ghana- students' activities and tutor's notes.* Accra: Unimax Macmillan Ltd.
Additional Reading List [10]	Asare-Inkoom, A. (2012). *Further/elective Mathematics for Senior Secondary Schools (Vol.1)*. Cape Coast, Hampton Printing Press. Backhouse, J. K., & Houldsworth, S. P. T. (1985). *Pure mathematics 1*. England: Pearson. Barnett, R. A., Ziegler, M. R., & Byleen, K. E. (2008). *College Algebra with Trigonometry*. New York, McGraw-Hill. Backhouse, J. K. & Houldsworth, S.P.T (2005). *Pure Mathematics 1*. London, Longman.Larson, R. E., Kanold, D. T., & Stiff, L. (1993). *Intermediate algebra*. Canada: D. C. Heath and Company. Ofosu, J. B. (2001). *A comprehensive SSS course in elective Mathematics*. Accra: Afram Publication. Swokowski, E. W. & Cole, J. A. (2005). *Precalculus: Functions and Graphs (10th ed.)*.Canada, Thomson Brooks/Cole. Turner, L. K., & Knighton, D. K. (1986). *Advanced algebra 1* (2nd ed.). England: Longman

TRIGONOMETRY

CONTEXT

The mathematics curriculum provides student teachers with a background in the theory and application of the content needed to understand the underlying structure and nature of mathematics. In addition, it exposes student teachers to the content knowledge needed in preparing them sufficiently to teach mathematics beyond what they will be expected to teach at the basic education level. The demands of rapid change in an information- based society today have influenced mathematics programs in various ways. The skills needed for jobs require thoughtful workers who are oriented to problem solving, irrespective of their gender, cultural and socio-economic backgrounds. By studying mathematics, students are taught to reason, to analyse, to think for themselves, while it imparts confidence in their own reasoning powers, and strengthens their mental faculties. Students need to use rules and thought processes of mathematics along with facts, to develop a reasoning pattern that will translate to their everyday lives, making them better thinkers and problem solvers. It is important for students to view mathematics as a significant part of our culture, not only for its valuable scientific applications but also for its enrichment of our cultural life. This mathematics curriculum is, therefore, intended to equip student teachers with the knowledge, skills and values needed to teach mathematics to basic school pupils in everyday life context. Besides, it provides the requisite resource material for preparing student teachers to teach mathematics sufficiently and effectively in our basic schools.

Course Title	**TRIGONOMETRY**						
Course Code	**EBS 169**	**Course Level:**	**100**	**Credit Value:**	**3**	**Semester**	**2**
Pre-requisite	Students have knowledge of basic Geometry in SHS core Mathematics						
Course Delivery Modes	**Face -to - face** [1] ✓	**Practical Activity** [2] ✓	**Work-Based Learning** [3] ✓	**Seminars** [4] ✓	**Independent Study** [5] ✓	**e-learning opportunities** [6] ✓	**Practicum** [7] ✓
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	This course is designed to expose students to the following: Radian measures of angles, application of bearings, maxima and minima points of graphs of trigonometric functions. Solutions of simple trigonometric equations including the use of graphical methods for $0° \le \theta \le 360°$, Sine and cosine rules, and trigonometric identities will also be studied. Compound and multiple angles – $\sin(A+B)$, $\cos(A+B)$, and $\tan(A+B)$, and their applications as well as longitudes and latitudes, and their application will be covered. The approaches that would be used in the delivery of this course should prepare trainees to ensure the learning progress of all students by projecting gender roles and issues relating to equity and inclusivity. **(NTECF, NTS 1a, 1b, 2c).**						

Course Learning Outcomes [8]: including INDICATORS for each learning outcome	**Outcomes:** By the end of the course, the student will be able to:			**Indicators:**
	1. demonstrate a sound knowledge of concepts and procedures learnt in the trigonometry course; (NTS 1a, 2c)			Show clear understanding of concepts in trigonometry
	2. apply the knowledge acquired to solve practical real problems, using appropriate procedures and ICT tools such as Geogebra and calculators; (NTS 2c)			Show ability to apply the concepts in trigonometric to solve real life problems Exhibit competence in the use of ICT tools as aid to solve problems related to trigonometry.
	3. calculate distances along lines of longitude and latitude using appropriate procedures. (NTS 2c)			Apply trigonometry to solving real life problems involving distances along lines of longitude and latitude
Course Content	**Units**	**Topics:**	**Sub-topics (if any):**	**Teaching and learning activities to achieve learning outcomes**
	1	Radian measures of angles	Concept of radian measure of an angle, relation between degree and radian	Expose students to measuring of angles in degrees using protractor Provide activities for students to convert degrees to radians and vice versa Apply the knowledge of radian measure in drawing trigonometric graphs
	2	Application of bearings	Bearing of a point from another point, back-bearing, Solving problems on bearing	Expose students to practical activities to determine the bearing of one point from another and vice versa. Provide worthwhile real-life problems on bearings for students to solve
	3	Maxima and minima points of graphs of trigonometric functions	Graphs of trigonometric functions e.g., $y = a\cos bx$, $y = b\sin ax$	Expose students through use appropriate ICT tool to draw graphs of trigonometric functions within given ranges and determine the maximum and minimum points
	4	Solutions of	Solving	Expose students to the analytical and graphical methods

		simple trigonometric equations including the use of graphical methods for $0° \le \theta \le 360°$,	trigonometric equations of the form $\cos x = a$, where $-1 \le a \le 1$, $\cos ax = b$, where $-1 \le b \le 1$, $a \sin bx = c$,	of solving given relevant trigonometric equations
	5	Sine and cosine rules, and trigonometry identities	Sine rule, cosine rule, other trigonometric identities, e.g $\cos 2x + 2\sin^2 x = 1$,	Take students through relevant activities to derive the sine and cosine rules and other trigonometric identities Provide relevant problems for students to solve
	6	Compound and multiple angles – $\sin(A+B)$, $\cos(A+B)$, and $\tan(A+B)$, and their applications	Compound angles, Multiple angles	Take students through relevant activities to derive trigonometric identities for compound angles of the form $\sin(A+B)$, and multiple angles of the form $\sin(2A)$, $\cos 3A$ Expose students to strategies for solving relevant application problems
	7	Longitudes and latitudes, and their application	Lines of Longitude, Lines of latitude, Distances on the surface of the earth	Use cooperative learning groups and relevant TLMs like the Globe to explain line of longitude and latitudes to students Provide students with relevant problems on calculation of distance between two points on the surface of the earth on the same longitude or latitude.
Course Assessment Components[9] : (Educative assessment of, for and as learning)	**Component 1: Formative Assessment (Individual and Group presentations)** **Summary of Assessment Method:** Critical Thinking, problem solving skills, creative and innovative skills, life-long learning/ personal skills, collaborative/ social skills, communication skills, literacy and numeracy skills, leadership skills, digital literacy/ICT skills (NTECF p. 45**)** • Presentations Weighting (10%)			

	Assesses Learning Outcomes: CLO 1 (Units 2, 3 and 5)
	Component 2: Formative Assessment **Summary of Assessment Method:** Critical Thinking, problem solving skills, creative and innovative skills (NTECF p. 45**)** • Assignments • Class exercises • Quizzes Weighting (30%) Assesses Learning Outcomes: CLO 1 & 2 (Units 1 - 6)
	Component 3: Summative Assessment **Summary of Assessment Method:** End of Semester Examinations Unit 1 – 8 (Core skills to be developed: Critical Thinking, problem solving skills, creative and innovative skills (NTECF p. 45**))** Weighting (60%) • Assesses Learning Outcomes: CLO 1, 2 & 3 (Units 1 – 7)
Instructional Resources	ICT tools such as *Geogebra* and programmable calculators.
Required Text (core)	Amankwah, H., Agyei, D. D., Naandam, S. M., & Eyiah-Bediako, F. (2012). *Mathematics for secondary school teacher III* Accra: Campaign Communications Limited. Asare-Inkoom, A. (2012). *Further/elective Mathematics for Senior Secondary Schools (Vol.1)*. Cape Coast, Hampton Printing Press
Additional Reading List [10]	Anna J. (2001). *Comprehensive elective mathematics for senior secondary school students, volume 1*. Kumasi: UGCC Publishing House. Backhouse, J. K. & Houldsworth, S.P.T (2005). *Pure Mathematics 1*. London, Longman. Larson, R. E., Barnett, R. A., Ziegler, M. R., & Byleen, K. E. (2008). *College Algebra with Trigonometry*. New York, McGraw-Hill. Kanold, D. T., & Stiff, L. (1993). *Intermediate algebra*. Canada: D. C. Heath and Company. Ministry of Education (MOE) Ghana (1993). *Ghana senior secondary school mathematics Book 3* Accra: Emmanuel Printing Services Ministry of Education (MOE) Ghana (1992). *Elective mathematics* Accra: New Mimic Enterprise Ofosu, J. B. (2001). *A comprehensive SSS course in elective Mathematics*. Accra: Afram Publication. Swokowski, E. W. & Cole, J. A. (2005). *Precalculus: Functions and Graphs (10th ed.)*.Canada, Thomson Brooks/Cole. Turner, L. K., & Knighton, D. K. (1986). *Advanced algebra 1* (2nd ed.). England: Longman

LEARNING THEORIES FOR TEACHING COMPUTERS

CONTEXT

The emergence of the information age has brought to the fore, the important role that information, knowledge and technology can play in facilitating socio-economic development. The effective use of information and knowledge is becoming the most critical factor for rapid economic growth and wealth creation, and for improving socio-economic well-being. Information and Communication Technology (ICT) should be integrated within all the learning activities of the school across all subjects. Targets for students' use of ICT relate to the usage of various ICT tools, broader issues associated with assessing information using these tools, and other management skills. As ICT is an important element in most subjects, ICT-related skills are assessed through traditional school subjects. The use of ICT in education can play a crucial role in providing new and innovative forms of support to teachers, students, and the learning process more broadly. With globalization, the information revolution, and increasing demands for a highly skilled workforce, nations are increasingly prioritizing education. The potential and promise of ICT use in education is clear: when implemented correctly, software in the classroom, for example, can allow students to learn at their own pace and tablets can help children develop important digital skills and computer know-how that they'll need to succeed in our knowledge-based economy. The programme has been designed to incorporate Digital Competence, which cover basic education. The programme's priority areas have been related to ICT infrastructure, competence development, research and development, digital teaching resources, curricula and working methods.

Course Title	**Learning Theories for Teaching Computers**						
Course Code	**EBS 168**	**Course Level**	**100**	**Credit value**	**3**	**Semester**	**2**
Pre-requisite							
Course Delivery Modes	**Face-to-face** ■	**Practical Activity** □	**Work-Based Learning** □	**Seminars** □	**Independent Study** ■	**e-learning opportunitie** □	**Practicum** □
Course Description for significant learning (indicate NTS, NTECF, BSC GLE to be addressed)	The aim of this course is not only to provide fundamental information about key concepts in learning theory but to provide essential and referential building blocks for learners to consider what makes technology-assisted learning different in process to learning without technology. The role of computers in individual cooperative learning is also addressed. The approaches that would be used in the delivery of this course would prepare trainees to be mindful of gender roles. The approaches must also deal with inclusivity, equality and equity by ensuring the learning progress of all learners. (NTECF, NTS 2b, 2c, 3a, 3c, 3e-3j, 3p;)						

Course Learning Outcomes: including INDICATORS for Each learning outcome	Outcomes Students will to: 1.1 Explain and discuss the three major theories of learning **NTS, 3d, & 3j** 1.2 Demonstrate the relationship between learning theories and computer education **NTS, 3d, & 3j**			Indicators 1.1 Discuss the tenets of constructivism, behaviourism and cognitivism 1.2 Explain what specific characteristics computers bring to these aspects of learning.
	2. Explain the Behavioural theory **NTS, 3d, & 3j**			2. Should be able to identify instances and conditions where computers do make a difference.
	Explain Cognitive Learning Process **NTS 2b, 2c, 3a, 3c, 3p**			3. Should be aware of debates concerning learning with media and have a clearer view of when computers can support learning and when they cannot and apply them as such.
	4. should be able to identify instances and conditions where computers do make a difference. **NTS 2b, 2c, 3a, 3c, 3p**			4. Application of computing skills in solving problems.
	5. Distinguish between the three major learning theories (Cognitivism. Behaviourism, Constructivism) **NTS, 3d, & 3j**			5. Identify and use behaviourist and constructivist learning strategies in teaching about computers and with computers
Course Content	Units	Topics	Sub-topics (if any):	Teaching and learning activities to achieve learning outcomes
	1	Definition of Key Terms		Use discussion method to explain key terms such as theory, learning, learning theory, training and technology.
	2	Behavioural Theory		- Use group project to explain the key concepts in behaviourism and the philosophical basis of

				behaviourism. Encourage females to head in order to deal with possible gender stereotypes - Brainstorm student on the basis for using computers for behaviourist learning - Group discussion on the theoretical rules that behaviourism give to designers of computer-based education and training. Encourage females to head in order to deal with possible gender stereotypes
	3	Cognitive Learning Processes		- Use the discussion method to explain key concepts in cognitivism and the philosophical basis of the cognitivism - Group project on the basis for using computers for cognitive learning process. Encourage females to head in order to deal with possible gender stereotypes.
	4	Constructivism and computers		- Group discussion on the key concepts of constructivism and philosophical basis of constructivism. Encourage females to head in order to deal with possible gender stereotypes - Group project on the basis of using the computer for constructivist learning. Encourage females to head in order to deal with possible gender stereotypes. - Discussion of the theoretical rules that constructivism give to designers of computer-based education and training - Group project on the distinction between the behaviourist, cognitivist and constructivist theories, and their implication for ICT integration.
	5	Relationship between		- Group project on the relationship between learning theory and computer education.

		Learning Theory and Computer Education		
Course Assessment Components: (Educative assessment of, for and as learning)	A combination of formative and summative assessment including group tasks, quizzes, individual and take home assignment and examination will be used. **Component 1: Formative assessment** (Weighting=40%): Quizzes, and individual assignments= 20%, Group assignments and seminar presentations= 20% **Core skills to be developed**: Interpersonal and presentation skills, intellectual skills, research and organisation and creative skills. Assessing learning outcomes: CLO 1-3 **Component 2: Summative assessment**: End of semester examination (Weighting-60%): Part A: Practical Examination =30%, Part B: Theoretical Examination=30% **Core skills to be developed**: Interpersonal and presentation skills, intellectual skills, research and organisation and creative skills. Assessing learning outcomes: CLO 1-5			
Instructional Resources	Computer assisted instruction, MS-PowerPoint slides, YouTube videos			
Required Text (core)	Gee, J. P. (2007). What video games have to teach us about learning and literacy? New York, NY: Palgrave Illeris, K. (2009). Contemporary theories of learning: Learning theorists in their own words. Abingdon: Routledge			
Additional Reading List	Somekh, B. (2007). Pedagogy and learning with ICT: Researching the art of innovation. London and New York: Routledge			