

YEAR 2

SEMESTER 1

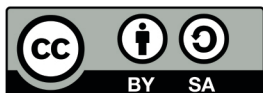
Four-Year B.Ed. Course Manual

ENVIRONMENTAL EFFECT OF AGRICULTURE AND ENTREPRENEURSHIP





The Government of Ghana



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FOREWORD

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

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

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

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

Professor Mohammed Salifu Director General, Ghana Tertiary Education Commission

ACKNOWLEDGEMENTS

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

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

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

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

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

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

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

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INTRODUCTION TO COURSE MANUALS

Welcome to this B.Ed. Course manual.

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

The manuals serve the following purposes:

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

Specifically, they also:

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

Who are course manuals for:

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

USING THIS MANUAL

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

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

My teaching philosophy is

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

A. Course information				
Title Page				
Environmental Effects of Agriculture and Entrepreneurship				
i. The vision for the New Four-Year B.Ed. Curriculum				
<p>“To transform initial teacher education and train highly qualified, motivated new teachers who are effective, engaging and fully prepared to teach the basic school curriculum and so improve the learning outcomes and life chances of all learners they teach as set out in the National Teachers’ Standards. In doing this to instil in new teachers the Nation’s core values of honesty, integrity, creativity and responsible citizenship and to achieve inclusive, equitable, high quality education for all learners.”</p>				
i. Course Details: as in course specification unless important reason why not				
Pre-requisite/s	WASSCE/SSSCE/Diploma in Agriculture.			
Co-Requisites	Links to other courses being taught, support coherence in student experience and avoid duplication			
Course Level	Course Code	Credit Value		
Table of Contents				
<p>1. Goal for the Subject or Learning Area</p> <p>In the first semester of year two, student teachers will be exposed to relevant industrial and entrepreneurial skills which could enable them function successfully in life</p>				
<p>2. Key contextual factors</p> <p>Ghana is a developing country with high unemployment, especially among the youth. This unemployment situation could be addressed by designing and implementing well-structured agricultural programmes to equip these teeming youth with employable skills. In the first year student teachers were introduced to the general TVET domains. In the second year student teachers are expected to be introduced to a more specialised area in agriculture as one of the TVET domains.</p>				
<p>3. Course Description</p> <p>This course is designed for the student teacher to concentrate on the domain of his/her specialization in Agriculture. The student teacher will be introduced to agribusiness principles, especially, to concepts in agriculture value chain and business plan development. Student teacher is supposed to observe classroom and wider school activities. Student teacher will reflect on experiences in his/her school placement and apply concept in agriculture, plan and address some of the issues of safety, health and hygiene, diversity, inclusivity and access. Student teacher is to build portfolio reflecting understanding of his/her learning environment, showing growing comprehension and application of concepts of inclusivity, equity, access for all student teachers irrespective of ability, gender or socio-economic status and cultural background. The reflection on student teacher’s professional practice must also encompass the national value of honesty, critical thinking and integrity. This adequately prepares the student teacher to finally settle on his/her area of specialisation within the Agriculture sub-domains. This course shall be delivered by using face to face interaction between the tutor and student teachers, practical activities, seminars, work based learning, independent study and e-learning. Student teachers shall be assessed on portfolio, report writing, observations, reflective practice, written examination and test. Written examination and test shall form only 30% of the assessment. It is expected that student teachers would be equipped to manage transition from this level to senior high school to college. (NTS 3c, p11, 14; NTECF p.39; NTS p 6, 10; NTS 1f, p.19; NTECF p. 33)</p>				
<p>4. Core and transferable skills and cross cutting issues, including equity and inclusion</p> <p>Core and transferable skills: Problem-solving skills (CLO1,2,3,4), personal motivation (CLO1, 2,3,4,5) civic literacy, team-work/ collaborative skills, analytical skills, critical thinking, creative and innovative skills, inquiry (CLO1-5). Cross-cutting issues: Gender, equity and inclusivity, professional attitudes and values, assessment strategies, action research, reflective thinking</p> <p>This can be found in the course specification. Which core and transferable skills or cross cutting issues will be applied or developed through this course? This needs to be made explicit to student teachers. Are there specific issues to do with equity and inclusion which must be addressed so that all student teachers can fully take part? For example, issues related to gender and mathematics or science.</p>				
5. Course Learning Outcomes			6. Learning indicators	
<p>By the end of the course, Students teachers will be able to:</p> <p>CLO.1 demonstrate knowledge and understanding of health, safety and environmental issues in agriculture (NTS 3c, p11, 14; NTECF p.39)</p>			<p>1.1 Develop an album of safety devices and their uses in agriculture</p> <p>1.2 Make a video on demonstration of the use of safety devices in agriculture</p> <p>1.3 Develop an album of pest and diseases affecting specific crop plants, animals and fish.</p>	

	<p>1.4 Write a report on control measures of pests and disease in specific crops, animals and fish.</p> <p>1.5 Make a catalogue/make a pre-video recording on the negative effect on the use of agricultural input and farm implements on the environment.</p> <p>1.6 Build a portfolio on issues of safety, health and hygiene in the environment during school placement and find solutions to observed challenges.</p>
CLO. 2 demonstrate understanding of entrepreneurial skills relevant for agricultural graduates to go into self-employment (NTS p 6, 10)	<p>2.1 Write a report on agriculture value chain analysis.</p> <p>2.2 Write a report on a business plan for agricultural enterprises that takes into consideration:</p> <ol style="list-style-type: none"> identified business opportunities in the area of farming, value addition, and supply chain resource mobilisation (financial, human and material) entrepreneurial skills to manage and grow the business marketing of agricultural goods and services
CLO.3 demonstrate knowledge and skills of agriculture through building portfolio with the support of the mentor (NTS 1f, p.19; NTECF p. 33)	3.1 Build a portfolio on the professional teacher values and attitudes, observed in the learning environment during the school placement session.

7. Course content

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

Unit	Topic	Sub-topic (If any)	Teaching and learning activities to achieve the learning outcome
1	Health, Safety and Environmental Issues in Agriculture (8 weeks)	<p>Crop husbandry and horticulture</p> <ul style="list-style-type: none"> Causes, symptoms, prevention and control of crop diseases. Pests of crop plants and their control Nursery/Farm hygiene/sanitation Effects of environmental variables on crop/ornamental plants production. <p>Animal Husbandry and Fishing</p> <ul style="list-style-type: none"> Causes, symptoms, diagnosis, treatment and control of animal and fish disease. Disinfection and hygiene of farm and fish structures Zoonotic diseases Effects of environmental variables on animal and fish performance. 	<ul style="list-style-type: none"> Discuss the causes, symptoms, prevention and control of crop/fish/animal pest and diseases. Visit to college farms/ agricultural industries to take pictures on safety devices to create an album of safety devices and their uses in agriculture. Take into consideration students with disability. Carry out hands-on practicals on crops, animals and fish farms/garden to demonstrate how to use safety devices. Take into consideration students with disability. Visit to college farms to take pictures or do internet search on crop, fish and animal pests and diseases to create an album. Carry out hands-on practicals through demonstration on how to apply pesticides to crop plants, acaricides and dewormers, etc. on animals. Emphasis should be on students with disability. 1200 Carry out farm practicals to observe symptoms and signs of diseases in crop plants, animals and fish. Emphasis should be on students with disability.

			<ul style="list-style-type: none"> Take pictures from community water bodies, mining sites, degraded agricultural lands, etc. to create a catalogue on negative effects of the use of man-made activities on agricultural lands and the environment. Emphasis should be on students with disability
2	Agribusiness and Entrepreneurship (4 weeks)	<ul style="list-style-type: none"> Meaning of agribusiness and entrepreneurship Business plan for agricultural enterprises 	<ul style="list-style-type: none"> Discuss the meaning of agribusiness, entrepreneurship and business plan for agricultural enterprises Discuss and develop value chains for different agricultural commodities (cabbage, tilapia, guinea fowl, etc.). Collect data from actors in the agricultural value chain (producer, input dealer/suppliers, agro processors, financial institutions, consumers, etc.) to produce a business plan Group presentation on the business plan

8. Course Assessment Components

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

- There should be a maximum of 3 assessment components per 3 credit-course; to avoid over loading student and tutors/lecturers
- The learning outcomes to be assessed by each assessment component should be identified.
- Each assessment component should explicitly reference the NTS or aspects of the NTS it will assess.
- Each assessment component should include:
 - The category or type, for example: written, coursework or practical, teaching, examination, collaborative project or presentation, poster, TLM
 - The type of assessment: of, for and /or as.
 - An indication of the size of each assessment component (e.g. duration of exams, word limit of written submissions, length of presentations; whether presentations have an individual or group etc.).
 - The weighting of each assessment component should be expressed as a % of total course mark (overall in each course: 60% continuous assessment of course work, 40% examination of course work).
- Each assessment should be manageable and relevant to supporting the student teachers' development.

The guidance on assessing student teachers from the NTS, the NTECF the CWG and the New Four Year B.Ed. should be used.

Assessment Type: Assessment as Learning (Subject Portfolio)

Category of Assessment: Component 1

Student teachers assessed on the following:

- Selected items of student work (3 of them -10% each)
- Midterm Assessment-20%
- Reflective journal – 40%
- Organization of subject portfolio (how it is presented and organized)

Assesses Learning Outcomes: CLO.1, CLO.2 and CLO.3

Summary of Assessment Methods

Assessment Type: Assessment for Learning (Subject Project)

Category of Assessment: Component 2

Maximum Duration: 3 hours

Students teachers are assessed on:

- Introduction- a clear statement of the purpose and specific objectives of the project
- Methodology-20%
- Substantive or main section -40%
- Conclusion – 40%

Assesses Learning Outcomes: CLO.1, CLO.2 and CLO.3

Summary of Assessment Methods

Assessment Type: Assessment of Learning (Examination)

Category of Assessment: Component 3

Maximum Duration: 3 hours

Students teachers are assessed on:

- Examination 40%

Assesses Learning Outcomes: CLO.1, CLO.2 and CLO.3

9. Teaching and learning strategies

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

10. Required Reading and reference list

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

11. Teaching and Learning Resources

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

Course related professional development for tutors/ lecturers

This is not included the course manual but professional development needs must be identified to ensure all tutors / lecturers are prepared to teach the course identify any specific topics or issues which may be challenging for tutors / lecturers.

LESSON 1

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Health, safety and environmental issues in Agriculture (Crop Diseases)				Lesson Duration	180 minutes	
Lesson description	This lesson is designed for the student teacher to concentrate on his/her specialization in Agriculture. The lesson is concerned with crop diseases, their causes, symptoms, prevention and control of crop measures. This lesson shall be delivered by using face to face interaction between the tutor and student teachers, practical activity and e-learning. Student teachers shall be assessed on portfolio and report writing. Issues of diversity, inclusivity and gender should be addressed in the classroom.						
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: <ul style="list-style-type: none"> Familiar with diseased crop-plants 						
Possible barriers to learning in the lesson	<ul style="list-style-type: none"> Gender and inclusivity issues on how to use safety devices 						
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face √	Practical Activity ✓	Work-Based Learning	Seminars	Independent Study	e-learning opportunities √	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic Use group to get student teachers to carry out hands-on practicals on how to use safety devices in crop production Use group to get student teachers to visit college farms to take pictures of diseased crops to create an album. Use e-learning opportunities to write a report on control measures of diseases in specific crops 						
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	The purpose of this lesson is to enable student teachers to know the causes, symptoms, prevention and control of crop diseases						
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification 	Learning Outcomes: By the end of the lesson, the student teacher will be able to:		Learning Indicators		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed.		
<ul style="list-style-type: none"> Learning indicators for each learning outcome 	Demonstrate knowledge and understanding of the causes, symptoms, prevention and control of crop diseases		<ul style="list-style-type: none"> Develop an album on crop diseases. Explain and write a report on control measures of diseases in crop plants 		<ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 		

Topic Title	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent	
			Teacher Activity	Student Activity
Preparations for use of course manual and Pre-Learning interactions	<p>Self-Introduction (If Tutor is new to the Class)</p> <p>Introduction to Environmental Effects of Agriculture and Entrepreneurship course manual</p> <p>Relevant Previous Knowledge</p>	1/ 30 Minutes	<p>Self Introduction Through face-to-face interaction, Tutor and student-teachers introduce themselves</p> <p>Introduction of Course Outline Tutor initiates discussion on the course manual emphasizing on the objectives, learning outcomes, course content and reference material</p> <p>Introduction of Lesson Tutor facilitates student teachers revision of their knowledge of the lesson from pre-tertiary and observation from the environment. Tutor to bring diseased and healthy crop plants to class.</p>	<p>Self Introduction Tutor and Student-teachers do self-introduction</p> <p>Introduction of Course Outline Student-teachers discuss the manual and what they expect to learn after studying the course</p> <p>Introduction of Lesson Student teachers answer questions and do brief discussions. Student teachers describe both plants.</p>
Health, safety and environmental issues in Agriculture (Crop Diseases)		2 50 minutes	<p>Discussion Tutor uses interactive lecture to explain causes, symptoms, prevention and control of crop diseases</p>	<p>Discussion Student teachers listen, contribute to the discussion and write down important points</p>
		3 50 minutes	<p>Farm Visit Tutor guides student teachers to form mixed groups and facilitate to visit crop farms to take pictures and create album on diseased crops</p>	<p>Creation of Album Student teachers visit to crop farms in groups on the subject matter, and take pictures from different crop farms and create an album on diseased crops..</p>
		4 50 minutes	<p>Report Writing Tutor guides student teachers and facilitate individual report writing on control measures of diseases in specific crops</p> <p>NB: Tutors are free to adapt the lesson to their own circumstances</p>	<p>Report Writing They write report on control measures of diseases in specific crops</p>
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	<p>Subject Portfolio</p> <ul style="list-style-type: none"> Group album on diseased crops Report writing on control measures of diseases in specific crops <p><i>NTS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i></p> <p><i>NTS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i></p>			

Teaching Learning Resources	<ul style="list-style-type: none">• Camera for taking pictures• Albums
Required Text (core)	<ul style="list-style-type: none">• Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi: F b &c Limited
Additional Reading List	
CPD Needs	<ol style="list-style-type: none">1. Report writing2. Group formation and group dynamics

Title of Lesson	Health, safety and environmental issues in Agriculture (Crop Pest)			Lesson Duration	180 minutes		
Lesson description	This lesson is designed for the student teacher to concentrate on his/her specialization in Agriculture. Student teachers will be introduced to pests of crop plants and their control measures. This lesson shall be delivered by using face to face interaction between the tutor and student teachers, practical activity and e-learning. Student teachers shall be assessed on portfolio and report writing. Issues of diversity, inclusivity and gender should be addressed in the classroom.						
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: Familiar with human infested with insect pests						
Possible barriers to learning in the lesson	<ul style="list-style-type: none"> Gender and inclusivity issues on how to operate some safety devices such as knap sack sprayer 						
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face √	Practical Activity ✓	Work-Based Learning	Seminars	Independent Study	e-learning opportunities √	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic Use group to get student teachers to visit college farms to take pictures of crop pests to create an album. Use e=learning opportunities to write a report on control measures of crop pest 						
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	The purpose of this lesson is to enable student teachers to know pests of crop plants and their control measures						
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes: By the end of the lesson, the student teacher will be able to:		Learning Indicators		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed.		
	<ul style="list-style-type: none"> Demonstrate knowledge and understanding of crop pest infestation 		Develop an album of pests affecting specific crop plants. Explain and write a report on control measures of pests in specific crops.		<ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 		

Topic Title	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent	
			Teacher Activity	Student Activity
Environmental Effects of Agriculture and Entrepreneurship		1 10 minutes	<u>Introduction of Lesson</u> Tutor facilitates student teachers revision of their knowledge of the lesson from pre-tertiary and observation from the environment by asking students to list some pest of human they know. Tutor likens crop pest to human pest.	<u>Introduction of Lesson</u> Students answer questions and do brief discussions. Lice, tsetse fly, etc.
		2 60 minutes	<u>Discussion</u> Tutor uses interactive lecture to explain pest of crops and their control measures	<u>Discussion</u> Student teachers listen, contribute to the discussion and write down important points
		3 60 minutes	<u>Farm Visit</u> Tutor guides student teachers to form mixed groups and facilitate to visit crop farms to take pictures and create album on pests of crops. Tutor should ensure that female and SEN Student Teachers participate fully.	<u>Creation of Album</u> Student teachers visit to crop farms in groups on the subject matter, and take pictures from different crop farms and create an album.
		4 50 minutes	<u>Report Writing</u> Tutor guides student teachers and facilitate to write a report on control measures of pests in specific crops NB: Tutors are free to adapt the lesson to their own circumstances	<u>Report Writing</u> They write report on control measures of pests in specific crops
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	Subject Portfolio <ul style="list-style-type: none"> Group album on pests of crops Report writing on control measures of pests in specific crops <i>NTS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>NTS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i>			
Teaching Learning Resources	<ul style="list-style-type: none"> Camera for taking pictures Albums 			
Required Text (core)	<ul style="list-style-type: none"> Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi: F b & c Limited 			
Additional Reading List	<ul style="list-style-type: none"> Vyas, A. K. (2014). <i>An Introduction to Agriculture</i>. (6th ed). New Delhi: Jain Brothers 			
CPD Needs	<ol style="list-style-type: none"> Report writing Group formation and group dynamics 			

LESSON 3

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1	2	3	4	5	6	7	8	9	10	11	12
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Title of Lesson	Health, safety and environmental issues in Agriculture (Nursery sanitation and farm hygiene)				Lesson Duration	180 minutes	
Lesson description	Student teachers will be introduced to nursery sanitation and farm hygiene. This lesson shall be delivered by using face to face interaction between the tutor and student teachers, practical activity and e-learning. Student teachers shall be assessed on pre-video recording and report writing. Issues of diversity, inclusivity and gender should be addressed in the classroom.						
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: Familiar with school farms and nursery						
Possible barriers to learning in the lesson	<ul style="list-style-type: none"> Gender and inclusivity issues on use of agricultural input and farm implement in agriculture 						
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face ✓	Practical Activity ✓	Work-Based Learning	Seminars	Independent Study	e-learning opportunities ✓	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic Use group to get student teachers to visit nurseries and farms to make a pre-video recording on the use of agricultural input and farm implement and general farm sanitation. Use e-learning opportunities to make a video and write a report 						
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	The purpose of this lesson is to enable student teachers to know nursery sanitation and farm hygiene						
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes: By the end of the lesson, the student teacher will be able to:			Learning Indicators		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed.	
	Demonstrate knowledge and understanding of nursery sanitation and farm hygiene			<ul style="list-style-type: none"> Explain and write a report on nursery sanitation and farm hygiene. Make a pre-video on how to maintain agricultural input and farm implement 		<ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 	

Topic Title	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent	
			Teacher Activity	Student Activity
Environmental Effects of Agriculture and Entrepreneurship		1 10 minutes	Introduction of Lesson Tutor facilitates student teachers revision of their knowledge of the lesson by asking student teachers list the things they do in their backyard (homes) to keep good sanitation and hygiene.	Introduction of Lesson Students answer questions and do brief discussions
		2 60 minutes	Discussion Tutor uses interactive lecture to explain nursery sanitation and farm hygiene.	Discussion Student teachers listen, contribute to the discussion and write down important points
		3 60 minutes	Farm Visit Tutor guides student teachers to form mixed groups and facilitate visit to different nurseries and farms to make a pre-video recording on how agricultural input and farm implement are used and maintained and general sanitation in the farms. Tutor should ensure that female and SEN Student Teachers participate fully.	Video Recording Student teachers visit nursery and crop farms in groups on the subject matter, and make a pre-video recording on the use of agricultural input and farm implement and nursery sanitation and farm hygiene.
		4 50 minutes	Report Writing Tutor guides student teachers and facilitate to write a report on nursery sanitation and farm hygiene NB: Tutors are free to adapt the lesson to their own circumstances	Report Writing They write report on nursery sanitation and farm hygiene
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	Subject Portfolio <ul style="list-style-type: none"> • Make a pre-video recording on negative effect on the use of agricultural input and farm implement • Report writing on nursery sanitation and farm hygiene <i>NTS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>NTS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i>			
Teaching Learning Resources	Video camera for recording			
Required Text (core)	<ul style="list-style-type: none"> • Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi: F b & c Limited 			
Additional Reading List	<ul style="list-style-type: none"> • Vyas, A. K. (2014). <i>An Introduction to Agriculture</i>. (6th ed). New Delhi: Jain Brothers 			
CPD Needs	<ol style="list-style-type: none"> 1. Report writing 2. Group formation and group dynamics 3. Video shooting 			

LESSON 4

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Health, safety and environmental issues in Agriculture (Effects of environmental variables on crop/ornamental plants production).			Lesson Duration	180 minutes		
Lesson description	The course will introduce student teachers to effects of environmental variables on crop/ornamental plants production. This lesson shall be delivered by using face to face interaction between the tutor and student teachers, practical activity and e-learning. Student teachers shall be assessed on creating of catalogue and report writing. Issues of diversity, inclusivity and gender should be addressed in the classroom.						
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: Familiar with negative activities that affect the crop farm environment						
Possible barriers to learning in the lesson	<ul style="list-style-type: none"> Gender and inclusivity issues on the effects of environmental variables on crops or ornamental plants production. 						
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face √	Practical Activity ✓	Work-Based Learning	Seminars ✓	Independent Study	e-learning opportunities √	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic Use group discussion to get student teachers to discuss the effects of environmental variables on crops or ornamental plants production and each group will make power point presentation to the class Use e-learning opportunities to prepare power point and tale pictures 						
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	The purpose of this lesson is to enable student teachers to know effects of environmental variables on crop/ornamental plant production.						
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes: By the end of the lesson, the student teacher will be able to:		Learning Indicators		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed.		
	<ul style="list-style-type: none"> Demonstrate knowledge and understanding of effects of environmental variables on crop/ornamental plants 		Explain and write a report on effects of environmental variables on crop/ornamental plants production. Take pictures from mining sites and degraded agricultural		<ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group 		

		lands in the community and the environment and create a catalogue	work
			<ul style="list-style-type: none"> Collaborative skills through group work
Topic Title	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent
			Teacher Activity
Environmental Effects of Agriculture and Entrepreneurship		1 10 minutes	<u>Introduction of Lesson</u> Tutor facilitates student teachers revision of their knowledge of the lesson by asking students to list some negative activities in the environment that affect crop production.
		2 60 minutes	<u>Discussion</u> Tutor uses interactive lecture to explain effects of environmental variables on crop/ornamental plants production.
		3 60 minutes	<u>Field Visit</u> Tutor guides student teachers to form mixed groups and facilitate visit to communities at mining sites and degraded agricultural land to create a catalogue. Tutor should ensure that female and SEN Student Teachers participate fully.
		4 50 minutes	<u>Power Point Preparation</u> Tutor facilitates power point presentation and discussion by the groups on subject matter. NB: Tutors are free to adapt the lesson to their own circumstances
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	Subject Portfolio <ul style="list-style-type: none"> Group presentation by power point on effects of environmental variables on crops and ornamental plants production <i>NTS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>NTS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i> <i>NTS 3c (Creates a safe, encouraging learning environment).</i>		
Teaching Learning Resources	<ul style="list-style-type: none"> Camera for taking pictures Laptop/PC for power point preparation and presentation 		
Required Text (core)	<ul style="list-style-type: none"> Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi: F b & c Limited 		

Additional Reading List	<ul style="list-style-type: none">• Vyas, A. K. (2014). An Introduction to Agriculture. (6th ed). New Delhi: Jain Brothers
CPD Needs	<ol style="list-style-type: none">1. Report writing2. Photography3. Power point preparation and presentation

LESSON 5

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Health, safety and environmental issues in Agriculture (Animal and fish diseases).				Lesson Duration	180 minutes	
Lesson description	This lesson is designed to introduce student teachers to causes, symptoms, diagnosis, treatment and control of animal and fish diseases. his lesson shall be delivered by using face to face interaction between the tutor and student teachers, practical activity and e-learning. Student teachers shall be assessed on creating of album and report writing. Issues of diversity, inclusivity and gender should be addressed in the classroom.						
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: Familiar with diseased animals						
Possible barriers to learning in the lesson	Gender and inclusivity issues on how to use safety devices to control animal and fish diseases						
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face ✓	Practical Activity ✓	Work-Based Learning	Seminars ✓	Independent Study	e-learning opportunities ✓	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic Use group to get student teachers to visit college farms to take pictures on fish and animal diseases .Use e-learning opportunities to make power and take pictures 						
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	The purpose of this lesson is to enable student teachers to know the causes, symptoms, diagnosis, treatment and control of animal and fish diseases.						
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes: By the end of the lesson, the student teacher will be able to:		Learning Indicators		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed.		
	<ul style="list-style-type: none"> Demonstrate knowledge and understanding of animal and fish diseases 		Explain and write a report on causes, symptoms, diagnosis, treatment and control of animal and fish diseases		<ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 		

Topic Title	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent	
			Teacher Activity	Student Activity
Environmental Effects of Agriculture and Entrepreneurship		1 10 minutes	<u>Introduction of Lesson</u> Tutor facilitates student teachers revision of their knowledge of the lesson by asking student teachers to list some disease of domestic animals they know.	<u>Introduction of Lesson</u> Students answer questions and do brief discussions
		2 50 minutes	<u>Discussion</u> Tutor uses interactive lecture to explain causes, symptoms, diagnosis, treatment and control of animal and fish diseases	<u>Discussion</u> Student teachers listen, contribute to the discussion and write down important points
		3 60 minutes	<u>Farm Visit</u> Tutor guides student teachers to form mixed groups and facilitate visit to animal farms and fish ponds to take pictures on animal and fish diseases to create an album. Tutor should ensure that female and SEN Student Teachers participate fully.	<u>Album Creation</u> Student teachers visit to animal farms and fish pond in groups on the subject matter, and take pictures on animal and fish diseases from different animal farms and fish ponds and create an album.
		4 60 minutes	<u>Discussion</u> Tutor guides student teachers to form mixed groups and facilitate power point presentation and discussion on causes symptoms, diagnosis, treatment and control of animal and fish diseases. Tutor should ensure that female and SEN Student Teachers participate fully. NB: Tutors are free to adapt the lesson to their own circumstances	<u>Power Point Presentation</u> Student teachers prepare power point presentation, share the respective group work with the rest of the class and engage in discussions in groups on the subject matter.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	Subject Portfolio <ul style="list-style-type: none"> • Create group album on diseases affecting specific animals and fish <i>NTS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>NTS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i>			
Teaching Learning Resources	<ul style="list-style-type: none"> • Camera for taking pictures • laptop computer/PCs, LCD Projector • Video camera for recording 			
Required Text (core)	<ul style="list-style-type: none"> • Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi: F b &c Limited 			

Additional Reading List	<ul style="list-style-type: none">• Vyas, A. K. (2014). An Introduction to Agriculture. (6th ed). New Delhi: Jain Brothers
CPD Needs	1. Power point preparation and presentation

LESSON 6

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Health, safety and environmental issues in Agriculture (Pest of Animals and Fish)				Lesson Duration	180 minutes
Lesson description	The student teacher will be introduced to pest (ecto- and endo-parasites) of animals and fish, their control methods and treatment. This lesson shall be delivered by using face to face interaction between the tutor and student teachers, practical activity and e-learning. Student teachers shall be assessed on report writing, video and creation of album. Issues of diversity, inclusivity and gender should be addressed in the classroom.					
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: Familiar with some ecto- and endo-parasites of pets and farm animals.					
Possible barriers to learning in the lesson	Gender and inclusivity issues on handling of pesticides to control pests in farm animals and fish.					
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face √	Practical Activity ✓	Work-Based Learning	Seminars	Independent Study	e-learning opportunities √
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic on types of pest in farm animals/fish Use group discussion to get student teachers to discuss the effects of pests and its economic importance in farm animals/fish and each group will make power point presentation to the class Use group to get student teachers to visit college animal/fish farms to carry out hands-on practicals through demonstration on handling and use of pesticides to control pest in farm animals and fish Use e-learning opportunities to make power point and video. 					
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	The purpose of this lesson is to enable student teachers to know endo- and ecto-parasites of farm animals and fish					
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification 	Learning Outcomes: By the end of the lesson, the student teacher will be able to: <ul style="list-style-type: none"> Demonstrate knowledge of type of endo- and ecto-parasites in farm animals and fish Demonstrate knowledge and understanding of effects of pest and their economic importance in farm animals and fish 	Learning Indicators <ul style="list-style-type: none"> Create an album of types of ecto and endo-parasites in farm animals and fish. Discuss the effects of pests and its economic importance in farm animals/fish Make a video on handling and use of pesticides in farm animals/fish 	Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed. <ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 			

	<ul style="list-style-type: none"> Demonstrate skills in handling and use of pesticides to control pest in farm animals and fish omains, and social studies 											
Topic Title	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent									
			<table border="1"> <thead> <tr> <th>Teacher Activity</th> <th>Student Activity</th> </tr> </thead> <tbody> <tr> <td> Introduction of Lesson Tutor facilitates student teachers revision of their knowledge of the lesson by asking student teachers to list some pest of domestic animals in their homes. </td> <td> Introduction of Lesson Students answer questions and do brief discussions </td> </tr> <tr> <td> Video Show and Discussion Tutor uses pre-video recording and interactive lecture to present types of pests in farm animals and fish. </td> <td> Discussion Student teachers listen, contribute to the discussion and write down important points </td> </tr> <tr> <td> Discussion Tutor guides student teachers to form mixed groups and facilitate a power point presentation and discussion on effects of pest in farm animals and fish and their economic importance. Tutor should ensure that female and SEN Student Teachers participate fully. </td> <td> Power Point Presentation Student teachers prepare power point presentation, share the respective group work with the rest of the class and engage in discussions in groups on the subject matter. </td> </tr> <tr> <td> Demonstration Tutor guides student teachers to form groups and facilitate visit to animal farms and fish ponds to demonstrate handling and use of pesticides to control farm animals and fish pests. Tutor should ensure that female and SEN Student Teachers participate fully. NB: Tutors are free to adapt the lesson to their own circumstances </td> <td> Video Recording Student teachers in groups visit the animal farms and fish ponds on the subject matter, and practice handling and use of pesticides in farm animals and fish and make a video </td> </tr> </tbody> </table>	Teacher Activity	Student Activity	Introduction of Lesson Tutor facilitates student teachers revision of their knowledge of the lesson by asking student teachers to list some pest of domestic animals in their homes.	Introduction of Lesson Students answer questions and do brief discussions	Video Show and Discussion Tutor uses pre-video recording and interactive lecture to present types of pests in farm animals and fish.	Discussion Student teachers listen, contribute to the discussion and write down important points	Discussion Tutor guides student teachers to form mixed groups and facilitate a power point presentation and discussion on effects of pest in farm animals and fish and their economic importance. Tutor should ensure that female and SEN Student Teachers participate fully.	Power Point Presentation Student teachers prepare power point presentation, share the respective group work with the rest of the class and engage in discussions in groups on the subject matter.	Demonstration Tutor guides student teachers to form groups and facilitate visit to animal farms and fish ponds to demonstrate handling and use of pesticides to control farm animals and fish pests. Tutor should ensure that female and SEN Student Teachers participate fully. NB: Tutors are free to adapt the lesson to their own circumstances
Teacher Activity	Student Activity											
Introduction of Lesson Tutor facilitates student teachers revision of their knowledge of the lesson by asking student teachers to list some pest of domestic animals in their homes.	Introduction of Lesson Students answer questions and do brief discussions											
Video Show and Discussion Tutor uses pre-video recording and interactive lecture to present types of pests in farm animals and fish.	Discussion Student teachers listen, contribute to the discussion and write down important points											
Discussion Tutor guides student teachers to form mixed groups and facilitate a power point presentation and discussion on effects of pest in farm animals and fish and their economic importance. Tutor should ensure that female and SEN Student Teachers participate fully.	Power Point Presentation Student teachers prepare power point presentation, share the respective group work with the rest of the class and engage in discussions in groups on the subject matter.											
Demonstration Tutor guides student teachers to form groups and facilitate visit to animal farms and fish ponds to demonstrate handling and use of pesticides to control farm animals and fish pests. Tutor should ensure that female and SEN Student Teachers participate fully. NB: Tutors are free to adapt the lesson to their own circumstances	Video Recording Student teachers in groups visit the animal farms and fish ponds on the subject matter, and practice handling and use of pesticides in farm animals and fish and make a video											
Environmental Effects of Agriculture and Entrepreneurship		1 10 minutes										
		2 50 minutes										
		3 60 minutes										
		4 60 minutes										
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	Subject Portfolio <ul style="list-style-type: none"> Group presentation by power point on effects of pest in farm animals and fish and their economic importance Video recording on handling and use of pesticides in farm animals and fish <i>NTS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>NTS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i> <i>NTS 3c (Creates a safe, encouraging learning environment).</i>											

Teaching Learning Resources	<ul style="list-style-type: none"> • Camera for taking pictures • laptop computer/PCs, LCD Projector • Video camera for recording
Required Text (core)	<ul style="list-style-type: none"> • Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi: F b & c Limited
Additional Reading List	<ul style="list-style-type: none"> • Koney, E. B. M. (2004). <i>Livestock production and health</i>. Accra: Advent Press. • Koney, E. B. M. (2004). <i>Poultry production and health</i>. Accra: Advent Press • Bluwey, F. A., Taiwo, I. O., Okonji, V. A., Kumah, L. A., Ipinmoroti, M. O., Boateng, M. A., & Idoko, F. A. (2018). <i>Introduction to Fisheries of West Africa (Volume 1)</i>. Benin City: Root and Associates Printing and Publishing House
CPD Needs	<ol style="list-style-type: none"> 1. Video shooting 2. Power point preparation and presentation

LESSON 7

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Health, safety and environmental issues in Agriculture (Disinfection and hygiene of farm and fish structures)				Lesson Duration	180 minutes
Lesson description	This lesson is designed for the student teacher to be introduced to disinfection and hygiene of animal farm and fish structures. It is part of bio-security measures in animal and fish farming. This lesson shall be delivered by using face to face interaction between the tutor and student teachers, practical activity and e-learning. Student teachers shall be assessed on report writing. Issues of diversity, inclusivity and gender should be addressed in the classroom.					
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: Familiar with disinfection and hygiene in our homes					
Possible barriers to learning in the lesson	Some student teachers may be allergic to chemical usage					
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face √	Practical Activity ✓	Work-Based Learning	Seminars	Independent Study	e-learning opportunities √
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic Use group to get student teachers to visit college animal and fish farms to carry out hands-on practicals through demonstration on how to use safety devices to disinfect and maintain hygiene in animal farms and fish structures. Use e-learning opportunities to write a report on subject matter 					
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	The purpose of this lesson is to enable student teachers to know disinfection and hygiene of farm and fish structures					
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification 	Learning Outcomes: By the end of the lesson, the student teacher will be able to:		Learning Indicators		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed.	
Learning indicators for each learning outcome	<ul style="list-style-type: none"> Demonstrate knowledge and understanding of disinfection and hygiene of farm and fish structures 		Explain and write a report on disinfection and hygiene of farm and fish structures		<ul style="list-style-type: none"> Diversity through formation of mixed group Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 	

Topic Title	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent	
			Teacher Activity	Student Activity
Environmental Effects of Agriculture and Entrepreneurship		1 10 minutes	<u>Introduction of lesson</u> Tutor facilitates student teachers revision of their knowledge of the lesson by asking student teachers how they ensure that their homes are not infected with micro-organisms, e.g. bacteria.	<u>Introduction of lesson</u> Students answer questions and do brief discussions
		2 50 minutes	<u>Discussion</u> Tutor uses interactive lecture to explain disinfection and hygiene of animal farm and fish structures	<u>Discussion</u> Student teachers listen, contribute to the discussion and write down important points
		3 60 minutes	<u>Demonstration</u> Tutor guides student teachers to form groups and facilitate visit to animal farms and fish structures to demonstrate how to use safety devices to disinfect and maintain hygiene of animal farms and fish structures. Tutor should ensure that female and SEN Student Teachers participate fully.	<u>Practicing of handling of safety devices</u> Student teachers in groups visit the animal farms and fish structures on the subject matter, and practice how to use safety devices to disinfect and maintain hygiene.
		4 60 minutes	<u>Discussion</u> Tutor guides student teachers to write a report on disinfection and hygiene of animal farm and fish structures NB: Tutors are free to adapt the lesson to their own circumstances	<u>Group Report Writing</u> They write report on disinfection and hygiene of animal farm and fish structures
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	In lesson assessment: <ul style="list-style-type: none"> Report writing on disinfection and hygiene of animal farm and fish structures. <i>S 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>S 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i> <i>S 3c (Creates a safe, encouraging learning environment).</i>			

Teaching Learning Resources	Drugs, disinfectants, vaccines etc
Required Text (core)	<ul style="list-style-type: none"> • Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi: F b & c Limited
Additional Reading List	<ul style="list-style-type: none"> • Koney, E. B. M. (2004). <i>Livestock production and health</i>. Accra: Advent Press. • Koney, E. B. M. (2004). <i>Poultry production and health</i>. Accra: Advent Press.
CPD Needs	<ol style="list-style-type: none"> 1. Explain and write a report on effects of environmental variables on animal and fish performance. 2. Take pictures from water bodies and degraded agricultural lands in the community and the environment and create a catalogue

LESSON 8

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Health, safety and environmental issues in Agriculture: Effects of environmental variables in agriculture				Lesson Duration	180 minutes	
Lesson description	This lesson is designed for the student teacher to be introduced to effects of environmental variables on animal and fish performance. This lesson shall be delivered by using face to face interaction between the tutor and student teachers, practical activity and e-learning. Student teachers shall be assessed on creating of album and report writing. Issues of diversity, inclusivity and gender should be addressed in the classroom.						
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: Familiar with negative activities or factors in the environment that affect the animals and man						
Possible barriers to learning in the lesson	<ul style="list-style-type: none"> Difficulty of getting gadgets to do practical demonstration on the topic 						
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face √	Practical Activity ✓	Work-Based Learning	Seminars ✓	Independent Study	e-learning opportunities √	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic Use group to take pictures on degraded lands and water bodies and create a catalogue Use e-learning opportunities to take pictures and make power point 						
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	<ul style="list-style-type: none"> The purpose of this lesson is to enable student teachers to know effects of environmental variables on animal and fish performance 						
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes: By the end of the lesson, the student teacher will be able to:		Learning Indicators		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed.		
	Demonstrate knowledge and understanding of environmental variables on animal and fish performance.		Explain and write a report on effects of environmental variables on animal and fish performance. Take pictures from water bodies and degraded agricultural lands in the community and the environment and create a catalogue		<ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 		

Topic Title	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent	
			Teacher Activity	Student Activity
Environmental Effects of Agriculture and Entrepreneurship		1 10 minutes	<u>Introduction of Lesson</u> Tutor facilitates student teachers revision of their knowledge of the lesson by asking student teachers to list some of the negative activities or factors in the environment that affect the animals and man	<u>Introduction of Lesson</u> Students answer questions and do brief discussions . pesticide usage, high temperatures, etc.
		2 60 minutes	<u>Discussion</u> Tutor uses interactive lecture to explain effects of environmental variables on animal and fish performance	<u>Discussion</u> Student teachers listen, contribute to the discussion and write down important points
		3 60 minutes	<u>Community Visit</u> Tutor guides student teachers to form mixed groups and facilitate visit to communities to take pictures from water bodies and degraded agricultural land to create a catalogue. Tutor should ensure that female and SEN Student Teachers participate fully.	<u>Creation of Catalogue</u> Student teachers visit to communities to take pictures from water bodies and degraded agricultural land in groups on the subject matter.
		4 50 minutes	<u>Discussion</u> Tutor facilitates power point presentation and discussion by the groups. Tutor should ensure that female and SEN Student Teachers participate fully. NB: Tutors are free to adapt the lesson to their own circumstances	<u>Power Point Presentation</u> Student teachers prepare power point, share the respective group work with the rest of the class through power point presentation and engage in discussions in groups on the subject matter.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	Subject Portfolio <ul style="list-style-type: none"> Group presentation by power point on effects of environmental variables on animal and fish performance. Create group catalogue on degraded water bodies and agricultural land <i>TS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>TS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i> <i>TS 3c (Creates a safe, encouraging learning environment).</i>			
Teaching Learning Resources	<ul style="list-style-type: none"> Camera for taking pictures laptop computer/PCs, LCD Projector Video camera for recording 			
Required Text (core)	<ul style="list-style-type: none"> Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi:F b &c Limited 			
Additional Reading List	<ul style="list-style-type: none"> Koney, E. B. M. (2004). <i>Livestock production and health</i>. Accra: Advent Press. 			

	<ul style="list-style-type: none"> • MOFA (2004). Fisheries in Ghana - A handbook on the fisheries sector in Ghana. Accra: Ministry of Food and Agriculture • Stickney, R. R. (2005). Aquaculture -Introductory text. London: Cabi Publishing.
CPD Needs	Team work (PDP, Theme 4); ICT skills (PDP, Theme 5); Assessing professional teaching portfolio (PDP, Theme 7)

LESSON 1

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Concepts in Agribusiness and Entrepreneurship							Lesson Duration	180 minutes
Lesson description	This lesson is designed for the student teacher to concentrate on his/her specialization in Agriculture, interacting with relevant introduction to agribusiness and entrepreneurship principles. This lesson shall be delivered by using face to face interaction between the tutor and student teachers, group work and power point presentations. Student teachers shall be assessed on power point presentation and report writing. Issues of diversity, inclusivity and gender should be addressed in the classroom.								
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: <ul style="list-style-type: none"> Familiar with agriculture business from pre-tertiary institutions 								
Possible barriers to learning in the lesson	<ul style="list-style-type: none"> Gender and inclusivity issues in group formation and presentation 								
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face ✓	Practical Activity	Work-Based Learning	Seminars ✓	Independent Study	e-learning opportunities ✓	Practicum		
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic Use group discussion to get student teachers to discuss the meaning of agribusiness and entrepreneurship and each group will make power point presentation to the class Use e-learning opportunities to make power point on subject matter 								
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	The purpose of this lesson is to enable student teachers to know the meaning of agribusiness and entrepreneurship.								
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes: By the end of the lesson, the student teacher will be able to: <ul style="list-style-type: none"> demonstrate understanding of entrepreneurial skills relevant for agricultural graduates to go into self-employment 		Learning Indicators Explain the concept of Agribusiness and entrepreneurship		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed. <ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 				

Topic Title Environmental Effects of Agriculture and Entrepreneurship	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent	
			Teacher Activity	Student Activity
		1 10 minutes	<u>Introduction of Lesson</u> Tutor facilitates student teachers revision of their knowledge of the lesson by asking the following questions: Who is a business man? 2. What is involved in running a business?	<u>Introduction of Lesson</u> Students answer questions and do brief discussions. 1. A business man is a person who buys and sells goods and services. 2. Buying, transporting, marketing, etc.
		2 60 minutes	<u>Discussion</u> Tutor uses interactive lecture to explain the concept of agribusiness and entrepreneurship.	<u>Discussion</u> Student teachers listen, contribute to the discussion and write down important points
		3 50 minutes	<u>Group Formation</u> Tutor guides student teachers to form mixed groups and facilitate a discussion on the concept of agribusiness and entrepreneurship	<u>Power Point Development</u> Student teachers engage in discussions in groups on the subject matter, and prepare power point presentation.
		4 60 minutes	<u>Group Power Point Presentation</u> Tutor facilitates power point presentation by the groups. Tutor should ensure that female and SEN Student Teachers participate fully. NB: Tutors are free to adapt the lesson to their own circumstances	<u>Group Power Point Presentation</u> They share the respective group work with the rest of the class through power point presentation.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	Subject Portfolio <ul style="list-style-type: none"> Group presentation by power point on concept of agribusiness and entrepreneurship <i>NTS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>NTS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i> <i>NTS 3c (Creates a safe, encouraging learning environment).</i>			
Teaching Learning Resources	<ul style="list-style-type: none"> laptop computer/PCs, LCD Projector 			
Required Text (core)	<ul style="list-style-type: none"> Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi:F b &c Limited 			
Additional Reading List	<ul style="list-style-type: none"> Vyas, A. K. (2014). <i>An Introduction to Agriculture</i>. (6th ed). New Delhi: Jain Brothers 			
CPD Needs	1. Group formation 2. Power point preparation and presentation			

LESSON 10

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Business plan for an agricultural enterprise				Lesson Duration	180 minutes
Lesson description	This lesson is designed for the student teacher to be introduced to the concepts of developing a business plan for an agriculture enterprise. This lesson shall be delivered by using face to face interaction between the tutor and student teachers, group work and power point presentations. Student teachers shall be assessed on power point presentation. Issues of diversity, inclusivity and gender should be addressed in the classroom.					
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: <ul style="list-style-type: none"> Familiar with some farmers operating small scale agricultural businesses 					
Possible barriers to learning in the lesson	<ul style="list-style-type: none"> Gender and inclusivity issues in group formation and presentation 					
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face √	Practical Activity	Work-Based Learning	Seminars ✓	Independent Study	e-learning opportunities √
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic Use group discussion to get student teachers to discuss the business plan for agricultural enterprise and each group will make power point presentation to the class Use e-learning opportunities to make power point on the subject matter 					
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	The purpose of this lesson is to enable student teachers to develop a business plan for an agricultural enterprise.					
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes: By the end of the lesson, the student teacher will be able to:		Learning Indicators		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed.	
	<ul style="list-style-type: none"> demonstrate understanding of entrepreneurial skills relevant for agricultural graduates to go into self-employment 		Explain the concept Agribusiness, entrepreneurship and business plan for agricultural enterprise.		<ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 	

Topic Title Environmental Effects of Agriculture and Entrepreneurship	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent	
			Teacher Activity	Student Activity
		1 10 minutes	<u>Introduction of Lesson</u> Tutor facilitates student teachers revision of their knowledge of the previous lesson by asking questions.	<u>Introduction of Lesson</u> Students answer questions and do brief discussions.
		2 60 minutes	<u>Discussion</u> Tutor uses interactive lecture to explain the concept Agribusiness, entrepreneurship and business plan for agricultural enterprise.	<u>Discussion</u> Student teachers listen, contribute to the discussion and write down important points
		3 50 minutes	<u>Group Formation</u> Tutor guides student teachers to form mixed groups and facilitate the development of business plan for agricultural enterprise. Tutor should ensure that female and SEN Student Teachers participate fully.	<u>Group Work</u> Student teachers develop business plan for agricultural enterprise.
		4 60 minutes	<u>Power Point Preparation</u> Tutor facilitates power point development and discussion by the groups. Tutor should ensure that female and SEN Student Teachers participate fully. NB: Tutors are free to adapt the lesson to their own circumstances	<u>Power Point Presentation</u> Student teachers prepare power point presentation, share the respective group work with the rest of the class through power point presentation and engage in discussions in groups on the subject matter.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	Subject Portfolio <ul style="list-style-type: none"> Group presentation by power point on business plan for agricultural enterprise <i>NTS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>NTS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i> <i>NTS 3c (Creates a safe, encouraging learning environment).</i> 			
Teaching Learning Resources	<ul style="list-style-type: none"> laptop computer/PCs, LCD Projector 			
Required Text (core)	<ul style="list-style-type: none"> Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi:F b &c Limited 			
Additional Reading List	<ul style="list-style-type: none"> Vyas, A. K. (2014). <i>An Introduction to Agriculture</i>. (6th ed). New Delhi: Jain Brothers 			
CPD Needs	<ol style="list-style-type: none"> Group formation Power point preparation and presentation Business plan preparation 			

LESSON 11

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Agriculture Value Chain				Lesson Duration	180 minutes
Lesson description	This lesson is designed for the student teacher to concentrate on his/her specialization in Agriculture, interacting with relevant introduction to agribusiness principles, especially, to concepts in agriculture value chain and business plan development. This course shall be delivered by using face to face interaction between the tutor and student teachers, group work and power point presentations. Student teachers shall be assessed on power point presentation and report writing. Issues of diversity, inclusivity and gender should be addressed in the classroom.					
Previous student teacher knowledge, prior learning (assumed)	Student Teachers are: <ul style="list-style-type: none"> Familiar with the meaning of the concept agribusiness and entrepreneurship 					
Possible barriers to learning in the lesson	<ul style="list-style-type: none"> Gender and inclusivity issues in group formation and presentation 					
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face √	Practical Activity	Work-Based Learning	Seminars ✓	Independent Study	e-learning opportunities √
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic Use group discussion to get student teachers to discuss and develop value chains for agricultural commodities in crops and animals and each group will make power point presentation to the class Use e-learning opportunities to prepare power point on the subject matter 					
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	The purpose of this lesson is to enable student teachers to know and develop value chains for different agricultural commodities in crops and animals.					
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes: By the end of the lesson, the student teacher will be able to:		Learning Indicators		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed.	
	<ul style="list-style-type: none"> demonstrate understanding of entrepreneurial skills relevant for agricultural graduates to go into self-employment 		Discuss and develop value chains for different agricultural commodities in crops, fish and animals.		<ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 	

Topic Title Environmental Effects of Agriculture and Entrepreneurship	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent	
			Teacher Activity	Student Activity
		1 10 minutes	<u>Introduction of Lesson</u> Tutor facilitates student teachers revision of their knowledge of the lesson by asking the following question: What are the various stages involve in crop/animal production from production to consumption?	<u>Introduction of Lesson</u> Students answer questions and do brief discussions. Stage 1 – farming State 2 – processing Stage 3 – Marketing Stage 4 - Consumption
		2 60 minutes	<u>Discussion</u> Tutor uses interactive lecture to explain value chains for agricultural commodities in crops and animals.	<u>Discussion</u> Student teachers listen, contribute to the discussion and write down important points
		3 50 minutes	<u>Group Formation</u> Tutor guides student teachers to form mixed groups and facilitate to develop value chains for different agricultural commodities in crops and animals. Tutor should ensure that female and SEN Student Teachers participate fully.	<u>Group Work</u> Student teachers develop value chains for different agricultural commodities in crops and animals.
		4 60 minutes	<u>Power Point Development</u> Tutor facilitates power point development and discussion by the groups. Tutor should ensure that female and SEN Student Teachers participate fully. NB: Tutors are free to adapt the lesson to their own circumstances	<u>Power Point Presentation</u> Student teachers prepare power point presentation, share the respective group work with the rest of the class through power point presentation and engage in discussions in groups on the subject matter.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	Subject Portfolio <ul style="list-style-type: none"> Group presentation by power point on value chains for different agricultural commodities in crops and animals. <i>NTS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>NTS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i> <i>NTS 3c (Creates a safe, encouraging learning environment).</i>			
Teaching Learning Resources	<ul style="list-style-type: none"> laptop computer/PCs, LCD Projector 			
Required Text (core)	<ul style="list-style-type: none"> Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi:F b &c Limited 			
Additional Reading List	<ul style="list-style-type: none"> Vyas, A. K. (2014). <i>An Introduction to Agriculture</i>. (6th ed). New Delhi: Jain Brothers 			
CPD Needs	<ol style="list-style-type: none"> Group formation Power point preparation and presentation Agriculture value chain 			

LESSON 12

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Agriculture Value Chain Development						Lesson Duration	180 minutes
Lesson description	<p>This lesson is designed for the student teacher to concentrate on his/her specialization in Agriculture, interacting with relevant introduction to agribusiness principles, especially, to concepts in agriculture value chain and business plan development.</p> <p>This course shall be delivered by using face to face interaction between the tutor and student teachers, group work and power point presentations. Student teachers shall be assessed on power point presentation and report writing. Issues of diversity, inclusivity and gender should be addressed in the classroom.</p>							
Previous student teacher knowledge, prior learning (assumed)	<p>Student Teachers are:</p> <ul style="list-style-type: none"> Familiar with the meaning of value chains in agricultural commodities in crops and animals. 							
Possible barriers to learning in the lesson	<ul style="list-style-type: none"> Gender and inclusivity issues in group formation and presentation 							
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face √	Practical Activity	Work-Based Learning	Seminars ✓	Independent Study	e-learning opportunities √	Practicum	
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<ul style="list-style-type: none"> Use interactive lecture to make brief presentation on the topic. Use groups to collect data from different actors in the agricultural value chain (producer, input dealer/suppliers, agro processors, financial institutions, consumers, etc.) Use group discussion to get student teachers to develop and discuss agricultural value chains based on the data collected from different actors and each group will make power point presentation to the class. Use e-learning opportunities to prepare power point on the subject matter 							
<ul style="list-style-type: none"> Purpose for the lesson, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed 	<p>The purpose of this lesson is to enable student teachers to collect data from different actors and develop agricultural value chains.</p>							
<ul style="list-style-type: none"> Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome 	Learning Outcomes: By the end of the lesson, the student teacher will be able to:			Learning Indicators		Identify which cross cutting issues – core and transferable skills, equity and addressing diversity. How will these be addressed.		
	<ul style="list-style-type: none"> demonstrate understanding of entrepreneurial skills relevant for agricultural graduates to go into self-employment 			<p>Discuss and develop value chains for different actors in agriculture</p>		<ul style="list-style-type: none"> Gender through conscious involvement of both males and females in all aspects of the lesson Inclusivity through mixed gender grouping Leadership skills through group work Team work skills through group work Collaborative skills through group work 		

Topic Title Environmental Effects of Agriculture and Entrepreneurship	Sub-topics (if any):	Stage/Time	Teaching and Learning Activity to achieve learning outcomes depending on the delivery mode selected. Teacher led, collaborative group work or independent	
			Teacher Activity	Student Activity
			<u>Introduction of Lesson</u> Tutor facilitates student teachers revision of their knowledge of the previous lesson by asking question.	<u>Introduction of Lesson</u> Students answer questions and do brief discussions
			<u>Discussion</u> Tutor uses interactive lecture to explain value chains for different actors in agriculture.	<u>Discussion</u> Student teachers listen, contribute to the discussion and write down important points
			<u>Group Formation</u> Tutor guides student teachers to form mixed groups and facilitate collection data from different actors in agriculture and develop value chains for each. Tutor should ensure that female and SEN Student Teachers participate fully.	<u>Data Collection</u> Student teachers develop value chains for each actor in agriculture based on the data collected.
			<u>Power Point Preparation</u> Tutor facilitates power point development and discussion by the groups. Tutor should ensure that female and SEN Student Teachers participate fully. NB: Tutors are free to adapt the lesson to their own circumstances	<u>Power Point Presentation</u> Student teachers prepare power point presentation, share the respective group work with the rest of the class through power point presentation and engage in discussions in groups on the subject matter.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson (link to Learning Outcomes)	Subject Portfolio <ul style="list-style-type: none"> Group presentation by power point on value chains from different actors in agriculture. <i>NTS 3e (Employs a variety of instructional strategies that encourages student participation and critical thinking).</i> <i>NTS 3f Pays attention to all learners, especially girls and students with Special Educational Needs, ensuring their progress.</i> <i>NTS 3c (Creates a safe, encouraging learning environment).</i>			
Teaching Learning Resources	<ul style="list-style-type: none"> laptop computer/PCs, LCD Projector 			
Required Text (core)	<ul style="list-style-type: none"> Upham, A. A. (2018). <i>An introduction to agriculture</i>. New Delhi: F b & c Limited 			
Additional Reading List	<ul style="list-style-type: none"> Vyas, A. K. (2014). <i>An Introduction to Agriculture</i>. (6th ed). New Delhi: Jain Brothers 			
CPD Needs	<ol style="list-style-type: none"> Group formation Power point preparation and presentation Agriculture value chain 			

Course Assessment	<p>¹Component 1: Subject Portfolio Assessment (30% overall score)</p> <ul style="list-style-type: none"> • Selected items of student work (3 of them -10% each) • Midterm Assessment-20% • Reflective journal – 40% • Organization of subject portfolio (how it is presented and organized) -10% <p>²Component 2: Subject Project</p> <ul style="list-style-type: none"> • Introduction- a clear statement of the purpose and specific objectives of the project • Methodology-20% • Substantive or main section -40% • Conclusion – 40% <p>Component 3: End of Semester Examination -40%</p>
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¹ See rubrics on subject portfolio assessment in annex 6 of NTEAP

² See rubrics on subject project assessment in annex 6 of NTEAP

