THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION,
SCIENCE AND TECHNOLOGY

Certificate of Approval

No. 1059

Title of Publication: Agriculture Syllabus for Advanced Secondary Education Form V - VI

Publisher: Tanzania Institute of Education

Author: Ministry of Education, Science and Technology

ISBN: 978-9987-09-804-0

This Syllabus was approved by the Ministry of Education, Science and Technology on 29th June, 2023 as Syllabus for Agriculture for Advanced Secondary Education Form V - VI in Tanzania.

Dr Lyabwene M. Mtahabwa
Commissioner for Education

AGRICULTURE SYLLABUS FOR ADVANCED SECONDARY EDUCATION
FORM V - VI
2023

Published 2023

ISBN: ISBN: 978-9987-09-804-0

Tanzania Institute of Education
Mikocheni Area
132 Ali Hassan Mwinyi Road
P. O. Box 35094
14112 Dar es Salaam

Mobile numbers: +255 735 041 168 / 735 041 170
E-mail: director.general@tie.go.tz
Website: www.tie.go.tz

This document should be cited as: Tanzania Institute of Education. (2023). *Agriculture Syllabus for Advanced Secondary Education Form V - VI.* Tanzania Institute of Education.

Table of Contents

List of Tables

Abbreviations and Acronyms

GDP	Gross Domestic Product
ICT	Information and Communication Technology
NECTA	National Examinations Council of Tanzania
TIE	Tanzania Institute of Education

Acknowledgements

The writing of the Agriculture Syllabus for Advanced Secondary Education Form V - VI involved various experts from government and non-government institutions. Therefore, the Tanzania Institute of Education (TIE) would like to thank all the experts who participated in the writing of this syllabus, namely lecturers, tutors, school quality assurance officers, teachers, experts from civil society organisations and curriculum developers from TIE. The Institute is also grateful to the National Technical Committee that was formed by the Minister for Education, Science and Technology for coordinating the curriculum review process for Pre-primary, Primary, Secondary and Teacher Education. The Committee discharged its responsibilities professionally by ensuring that the contents of this syllabus are in line with the main objective of the 2023 curricular review, which is to ensure that the graduates acquire skills, knowledge and attitudes that will enable them to create self-employment, employ others, be employed and able to sustain themselves.

Finally, TIE thanks the Ministry of Education, Science and Technology in a special way for facilitating the preparation and distribution of this syllabus.

Dr Aneth A. Komba
Director General
Tanzania Institute of Education

1.0 Introduction

Agriculture for Advanced Secondary Education is a compulsory subject for students who choose to join Natural Science stream taking Agriculture among the subjects in their combination. The subject enables students to learn advanced techniques for agricultural production and develop attitudes as well as skills that will enable them to engage well in organised agricultural production. It also enables students to consolidate, and extend their agricultural skills for production of both crop and animal products using basic and some advanced techniques. It is expected that the subject will act as a tool for promoting other agricultural skills related to problem-solving, critical and creative thinking, collaboration, and communication, thus developing students' confidence to apply their agricultural skills and knowledge in appropriate situations. It is also expected that students who learn Agriculture in Advanced Secondary Education will develop competences that will enable them to engage fully in the practical production of crops and livestock using basic and some advanced production practices in a commercial way. Studying the subject will also act as a catalyst for promoting agricultural development in the country, stimulating economic growth, and enhancing livelihoods and food security in the country.

The Agriculture Syllabus is designed to guide the teaching and learning of Agriculture at Advanced Secondary Education, Form V – VI, in the United Republic of Tanzania. The syllabus interprets the competences indicated in the 2023 Advanced Secondary Education Curriculum. It provides information that will enable teachers to plan their teaching process effectively. It also provides teaching and learning opportunities that guide teachers to apply different methods and strategies to promote 21st Century skills which include creativity, communication, collaboration, critical thinking and problem solving.

2.0 Main Objectives of Education in Tanzania

The main objectives of education in Tanzania are to enable every Tanzanian to:

(a) Develop and improve his or her personality so that he or she values himself or herself and develops self-confidence;

(b) Respect the culture, traditions and customs of Tanzania; cultural differences; dignity; human rights; attitudes and inclusive actions;

(c) Advance knowledge and apply science and technology, creativity, critical thinking, innovation, cooperation, communication and positive attitudes for his or her own development and the sustainable development of the nation and the world at large;

(d) Understand and protect national values, including dignity, patriotism, integrity, unity, transparency, honesty, accountability and the national language;

(e) Develop life and work-related skills to increase efficiency in everyday life;

(f) Develop a habit of loving and valuing work to increase productivity and efficiency in production and service provision;

(g) Identify and consider cross-cutting issues, including the health and well-being of the society, gender equality, as well as the management and sustainable conservation of the environment; and

(h) Develop national and international cooperation, peace and justice per the Constitution of the United Republic of Tanzania and international conventions.

3.0 Objectives of Advanced Secondary Education

The objectives of Advanced Secondary Education are to:

(a) Strengthen, broaden and develop a deeper understanding of the knowledge, skills and attitudes developed at the Ordinary Secondary Education;

(b) Safeguard customs and traditions, national unity, national virtues, democracy, respect for human and civil rights, duties and responsibilities associated with such rights;

(c) Develop self-confidence and the ability to learn in various fields, including science and technology as well as theoretical and technical knowledge;

(d) Improve the use of language in academic communication;

(e) Strengthen accountability for cross-cutting issues, including health, security, gender equality and sustainable environmental conservation;

(f) Develop competence and various skills which will enable the student to employ himself or herself, to be employed and to manage his or her life by exploiting his or her environment well; and

(g) Develop readiness to continue to a college education.

4.0 General competences for Advanced Secondary Education

The general competences for Advanced Secondary Education are to:

(a) Apply the knowledge and skills acquired in Ordinary Secondary Education to strengthen and broaden academic understanding;

(b) Demonstrate an appreciation of citizenship, national virtues, human rights and civil rights;

(c) Demonstrate confidence in learning various fields, including Science and Technology, as well as theoretical and practical knowledge;

(d) Use language skills in academic communication;

(e) Apply knowledge of cross-cutting issues to master the surrounding environment;

(f) Use knowledge and skills to enable student to employ oneself, be employed as well as manage life and his/her environment; and

(g) Demonstrate readiness to proceed to the next level of education.

5.0 Main and Specific Competences for Advanced Secondary Education

The main and specific competences to be developed are presented in Table 1.

Table 1: *The Main and Specific Competences for Form V - VI*

Main competences	Specific competences
1.0 Demonstrate mastery of the principles of agriculture	1.1 Demonstrate an understanding of principles and some advanced practices of agriculture
	1.2 Demonstrate a basic understanding of the agricultural value chain for selected products
	1.3 Demonstrate an understanding of some advanced technologies in agriculture
2. 0 Use some advanced technologies in agriculture	2.1 Use technology to increase agricultural production
3. 0 Conduct a project in Agriculture	3.1 Conduct a project in Agriculture

6.0 Roles of Teachers, Students and Parents/Guardians in Teaching and Learning

A good relationship between a teacher, student and parent or guardian is fundamental in ensuring successful learning. This section outlines the roles of each participant in facilitating effective teaching and learning process of Agriculture.

6.1 The teacher

The teacher is expected to:

(a) Help the student to learn and develop the intended competences in Agriculture;

(b) Use teaching and learning approaches that will allow students with different needs and abilities to:

(i) develop the competences needed in the 21st Century; and

(ii) actively participate in the teaching and learning process;

(c) Use student centred instructional strategies that make the student a centre of learning, allow them to think, reflect and search for information from various sources.

(d) Create a friendly teaching and learning environment;

(e) Prepare and improvise teaching and learning resources;

(f) Conduct formative assessment regularly by using tools and methods which assess theory and practice;

(g) Treat all the students equally irrespective of their differences;

(h) Protect the student while at school;

(i) Keep track of the student's daily progress;

(j) Identify individual student's needs and provide the right intervention;

(k) Involve parents/guardians and the society at large in the student's learning process; and

(l) Integrate cross-cutting issues and ICT in the teaching and learning process.

6.2 The student

The student is expected to:

(a) Develop intended competences by participating actively in various learning activities inside and outside the classroom;

(b) Participate in the search for knowledge from various sources, including textbooks, supplementary books and other publications in online libraries.

6.3 The parent/guardian

The parent/guardian is expected to:

(a) Monitor their child's academic progress;

(b) Where possible, provide child with the needed academic support;
(c) Provide a child with a safe and friendly home environment which is conducive for learning;
(d) Keep track of the child's progress in behaviour;
(e) Provide the child with any necessary materials required in the learning process; and
(f) Instill in the child a sense of commitment and positive value towards education and work.

7.0 Teaching and Learning Methods

The teaching and learning methods are instrumental in developing student's competences. This syllabus suggests teaching and learning methods for each activity which includes but not limited to discussions, presentations, field visits, practical work, research, scientific experiments, and project works. However, a teacher is advised to plan and use other appropriate methods based on the environment or context. All the teaching and learning methods should be integrated with the everyday lives of students.

8.0 Teaching and Learning Resources

The process of teaching and learning requires different resources for theory, experimental and field works. In that regard, both the teacher and students should work together to collect or improvise alternative resources available in the school and home/ community environment when needed. The teacher and student are is expected to constantly seek for information from various sources in order to facilitate teaching and learning effectively. The list of approved textbooks and reference books shall be provided by the TIE.

9.0 Assessment of the Learning Process

Assessment is important in teaching and learning of Agriculture subject. It is divided into formative and summative assessments. Formative assessment informs both the teacher and students on the progress of teaching and learning. It also helps in decision

making on improving the teaching and learning process. Teachers are, therefore, expected to apply a wide range of formative assessment methods which include but not limited to discussions, presentations, oral questions, brainstorming, experiments, observations, practical and projects.

Summative assessment, on the other hand, will focus on determining student's achievement of learning. Teachers are expected to use a variety of summative assessments including mid-term tests, terminal, mock examinations and projects. The scores obtained from these assessments will be used as Continuous Assessment (CA). Therefore, the continuous assessments shall contribute 30% and the National Form VI Examination shall be 70% of the student's final achievement, as indicated in Table 2.

Table 2: *Contribution of Continuous Assessment and National Examination in the final score*

Type of Assessment	**Form V**	**Form VI**
First Term Examination	5%	6%
Second Term Examination	5%	-
Project	-	7%
Mock Examination	-	7%
National Examination	-	70%
Total	**100%**	

10.0 Number of periods

The Agriculture Syllabus for Advanced Secondary Education provides estimates of the time that will be spent in teaching and learning, in consideration of the complexity of the specific competences and the learning activities. Ten periods of 40 minutes each have been allocated for this subject per week.

11.0 Teaching and Learning Contents

The teaching and learning contents are presented in matrix form with seven columns which include main competences, specific competences, learning activities, suggested teaching and learning methods, assessment criteria, suggested resources and number of periods. Tables 3 and 4 present the teaching and learning contents for Form V and VI, respectively.

Form V

Table 3: *Teaching and Learning Contents for Form V*

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
1.0 Demonstrate mastery of the principles of agriculture	1.1 Demonstrate an understanding of principles and some advanced practices of agriculture	Describe the principles and practices for the production of selected crops (mushroom, clove, avocado, tea, coffee and cashew)	**Field visits:** In groups or whole class, students guided to visit school and/ or nearby fields to study about the practices involved in production of mushroom, clove, avocado, tea, coffee and cashew **Library search:** In groups or individually, students guided to search information from various literature about principles and practices recommended for production of the selected crops **Group discussion:** In groups, students guided to consider findings from field visits and literature search to discuss about appropriate practices for production of the selected crops **ICT based learning:** Students guided to explore practices for production of the selected crops through video clips	The principles and practices applied in the production of selected crops (mushroom, clove, avocado, tea, coffee and cashew) are well described	Fields of the selected crops, common tools/ equipment, and materials/ supplies used in production of the selected crops, and units/agencies carrying out various activities involved in value chain of the selected crops	60

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
	1.2 Demonstrate a basic understanding of the agricultural value chain for selected products	Analyse the problems associated with the cultivation, postharvest management and marketing of selected crops (mushroom, clove, avocado, tea, coffee and cashew) and propose possible solutions	**Group works:** In manageable groups, students guided to critically analyse problems of cultivation, postharvest management and marketing of the mushroom, clove, avocado, tea, coffee & cashew, and suggest viable solutions to the problems **Case studies:** Through case studies, students guided to identify, analyse and propose possible solutions to solve problems associated with cultivation, postharvest management and marketing of the selected crops **Guest speaker/resource person:** Students guided to learn on how to identify problems associated with cultivation, postharvest management and marketing of the selected crops, and viable solutions	The problems associated with cultivation, postharvest management and marketing of the selected crops (mushroom, clove, avocado, tea, coffee and cashew) are well analysed and possible solutions proposed	Fields of the selected crops, and units/ agencies carrying out various activities involved in value chain of the selected crops	60

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
	1.3 Demonstrate an understanding of some advanced technologies in agriculture	Describe advanced agricultural technologies used in crop production (technologies used in planning, site selection, propagation and nursery management, crop establishment, crop management, postharvest management, and marketing)	**Brainstorming:** Students guided to brainstorm on advanced technologies used in crop production **Library search:** In groups or individually, students guided to search information from various literature about the advanced agricultural technologies used in crop production **ICT-based learning:** Students guided to explore about the technologies through various simulation models and relevant online literature **Field visits:** In groups or whole class, students guided to visit school and/ or nearby fields to explore the applicability of the technologies	Advanced agricultural technologies used in crop production (technologies used in planning, site selection, propagation and nursery management, crop establishment, crop management, postharvest management, and marketing) are well described	Fields of various crops, units/agencies carrying out various activities involved in value chain of crops, and tools/equipment & materials/ supplies for crop production	60

Main competences	Specific competences	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
2.0 Use some advanced technologies in agriculture	2.1 Use technology to increase agricultural production	Apply basic and some advanced agricultural technologies in the production of selected crops (mushroom, clove, avocado, tea, coffee and cashew)	**Field practicals:** In groups or individually, students guided to: • Perform basic practices recommended for production of the selected crops • Implement affordable solutions in solving identified problems associated with cultivation, postharvest management and marketing of the selected crops • Try out and adapt the advanced technologies learnt for producing the selected crops in school/ home fields	Advanced agricultural technologies in the production of the selected crops (mushroom, clove, avocado, tea, coffee and cashew) are well applied	Tools/equipment & materials/ supplies used in the production of mushroom, clove, avocado, tea, coffee, and cashew	180
3.0 Conduct a project in Agriculture	3.1 Conduct a project in Agriculture	Identify agricultural problem in society, and design and carry out a project to address it	**Project:** In groups or individually, students guided to identify a problem in any segment of crop/animal value chain (from initial production to harvesting, and postharvest management & marketing), then plan and carry out a project to address the identified problem	Agricultural problem in society identified, and a project to address it is well designed and implementation started	Various tools, equipment & supplies and reports related to the chosen project	30

Form VI

Table 4: *Teaching and Learning Contents for Form VI*

Main competence	Specific competence	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
1.0 Demonstrate mastery of the principles of agriculture	1.1 Demonstrate an understanding of principles and some advanced practices of agriculture	(a) Describe basic principles and some advanced practices for production of selected crops (cotton, oil palm, sisal, coconut and grape)	**Field visits:** In groups or whole class, students guided to visit school and/or nearby fields to study about the practices involved in production of cotton, oil palm, sisal, coconut and grape **Library search:** In groups or individually, students guided to search information from various literature about practices recommended for production of the selected crops **Group discussion:** In manageable groups, students guided to consider findings from field visits and literature search to discuss about appropriate practices for production of the selected crops	Basic principles and some advanced agricultural practices applied in production of the selected crops (cotton, oil palm, sisal, coconut and grape) are well described	Fields for production of the selected crops, production guides of the selected crops, and tools/ equipment & materials for production of the selected crops	60

Main competence	Specific competence	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
		(b)Describe basic principles and some advanced practices for production of goat and sheep	**Field visit:** In groups or whole class, students guided to visit school and/or nearby farms to study about the practices involved in production of meat, dairy & mohair goat, and meat & woollen sheep **Library search:** In groups or individually, students guided to search information from various literature about practices recommended for production of meat, dairy & mohair goat, and meat & woollen sheep **Group discussion:** In manageable groups, students guided to consider findings from field visits and literature search to discuss about appropriate practices for production of meat, dairy & mohair goat, and meat & woollen sheep	Basic principles and some advanced practices for production of goat and sheep are well described	Production guides, tools/equipment and materials for production of goat and sheep, goat and sheep rearing units	

Main competence	Specific competence	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
	1.2 Demonstrate a basic understanding of the agricultural value chain for selected products	(a) Analyse the problems associated with the cultivation, postharvest management and marketing of selected crops (cotton, oil palm, sisal, coconut and grape) and propose possible solutions	**Group works:** In manageable groups, students guided to critically analyse problems associated with cultivation, postharvest management and marketing of the selected crops, and suggest solution to the problems **Case studies:** Through case studies, students guided to identify, analyse and propose possible solutions to solve problems associated with cultivation, postharvest management and marketing of the selected crops **Guest speaker:** Through guest speaker(s)/resource person(s), students guided to learn on how to identify problems associated with cultivation, postharvest management and marketing of the selected crops, and viable solutions	Problems associated with the cultivation, postharvest management and marketing of the selected crops (cotton, oil palm, sisal, coconut and grape) are well analysed, and possible solutions proposed	Fields for production of cotton, oil palm, sisal, coconut and grape; and documentaries depicting problems in various segments of value chains in production of the selected crops and their solutions	60

Main competence	Specific competence	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
		(b) Analyse the problems associated with the husbandry, postharvest management and marketing of livestock produce and products (goat & sheep) and propose possible solutions	**Group works:** In groups, students guided to critically analyse problems of husbandry, and postharvest management and marketing of goat & sheep produce and products, and suggest solution to the problems **Case studies:** Through case studies, students guided to identify, analyse, propose possible solutions to solve problems associated with husbandry, and postharvest management and marketing of goat & sheep and their products **Guest speaker:** Students guided to learn from guest speakeron how to identify problems associated with husbandry, postharvest management and marketing of goat & sheep products, and viable solutions	Problems associated with husbandry, postharvest management and marketing of livestock produce and products (goat & sheep) are well analysed and viable solutions proposed	Goat & sheep farms, reports, and documentaries depicting problems in various segments of value chains in production of goat & sheep and their solutions	60

Main competence	Specific competence	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
	1.3 Demonstrate an understanding of some advanced technologies in agriculture	(a) Describe advanced agricultural technologies used in animal production (technologies in husbandry, postharvest management and marketing)	**Brainstorming:** Students guided to brainstorm on advanced technologies used in animal production with respect to husbandry, postharvest management and marketing **ICT-based learning:** Students guided to explore about the advanced technologies in animal production through various simulation models and relevant online literature **Field visits:** In groups or whole class, students guided to visit school and/ or nearby fields to explore the applicability of the advanced technologies in animal production **Demonstrations:** By using method and result demonstrations, students guided to explore about applicability of the advanced technologies in animal production	Advanced agricultural technologies used in animal production (technologies in husbandry, postharvest management and marketing) are well described	Documentaries depicting application of advanced technologies in various segments of value chains in animal production	60

Main competence	Specific competence	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
2.0 Use some advanced technologies in agriculture	2.1 Use technology to increase agricultural production	(a) Apply basic and some advanced agricultural technologies in the production of selected crops (cotton, oil palm, sisal, coconut and grape)	**Field practicals:** In groups or individually, students guided to: • Perform basic practices recommended for production of the selected crops • Implement affordable solutions in solving the identified problems associated with cultivation, postharvest management and marketing of the selected crops • Try out and adapt the advanced technologies learnt for producing the selected crops in school/ home fields	Basic and some advanced agricultural technologies in the production of the selected crops (cotton, oil palm, sisal, coconut and grape) are well applied	Fields using basic and advanced the technologies in performing various production practices, documentaries, and videos depicting application of advanced technologies in various segments of value chains in production of the selected crops	180

Main competence	Specific competence	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
		(b)Apply basic some advanced agricultural technologies in goat and sheep production	**Field practicals:** In manageable groups or individually, students guided to: • Perform basic practices recommended for goat and sheep production • Implement affordable solutions in solving identified problems associated with husbandry, and postharvest management and marketing of goat and sheep produce products • Try out and adapt the advanced technologies learnt for producing goat and sheep products	Basic and some advanced agricultural technologies in production of goat and sheep are well applied	Farms using advanced technologies, documentaries, videos depicting application of advanced technologies in various segments of value chains in production of goat and sheep	

Main competence	Specific competence	Learning activities	Suggested teaching and learning methods	Assessment criteria	Suggested resources	No. of periods
3.0 Conduct a project in Agriculture	3.1 Conduct a project in Agriculture	Complete and submit a report on the project started in Form V	**Project:** Students guided to accomplish the project work started in Form V, present the work and submit a report	The project started in Form V is well completed and a report submitted	Various fields/ agencies involved in agricultural production and various reports depicting projects done in segments of crop/animal production value chain	30

Bibliography

Israel Agency for International Development Cooperation. (2019). *Agricultural Education in Primary and Secondary Schools for Africans*. Israel Agency for International Development Cooperation.

Curriculum Development Centre, Ministry of Education Malaysia (2005). *Integrated Curriculum for Secondary Schools*. Curriculum Development Centre.

Kenya Certificate of Secondary Education. (2002). *Agriculture Syllabus*. Kenya Institute of Curriculum Development.

National Curriculum Development Centre (NCDC). (2008). *Agriculture teaching syllabus. Uganda Certificate of Education. Senior 1 - 4*.

Rwanda Education Board. (2015). *Competence Based Curriculum (Agriculture)*. Rwanda Education Board.

Tanzania Institute of Education. (2009). *Agriculture Syllabus for Advanced Level Secondary Education (Form V - VI)*. Tanzania Institute of Education.

Tanzania Institute of Education (2023). *Agriculture for Advanced Level Secondary Education Form Five Student's Book*. Tanzania Institute of Education.

Tanzania Institute of Education (2023). *Agriculture for Advanced Level Secondary Education Form Six Student's Book*. Tanzania Institute of Education.

Tanzania Institute of Education. (2022). *Agriculture for Ordinary Level Secondary Education Form Four Student's Book*. Tanzania Institute of Education.