Ministry of Education

Test Blueprint for National Exit Examination to be held in 2015 E.C

Band: 4

Program: Bachelor of Science Degree in Agricultural Economics

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1. Introduction

In order to improve the quality of graduates produced by higher learning institutions, Ethiopia's Ministry of Education has announced the implementation of an exit exam for all undergraduate program students (public and private) beginning with the 2022/2023 academic year. The exit exam was designed to determine whether students had acquired the necessary knowledge, skills, and attitudes. This requires determining competency areas for a specific program that has already been completed. It is necessary to plan the development of tests based on the prepared competency areas.

The Ministry of Education of Ethiopia has announced the implementation of exit exam for all undergraduate program students (public and private), beginning with the 2022/2023 academic year, in order to improve the quality of graduates produced by higher learning institutions. The exit exam aimed at checking whether students have acquired the required knowledge, skills and attitudes or not. To implement this, it requires determining competency areas for a specific program, which is already completed. Based on the competency areas prepared, it needs to plan the construction of tests.

The planning of a test is the first and most important step in the development of an achievement test. An achievement test necessitates very systematic and careful planning, as good planning is a sign of success. Tests are tools that provide scores that measure the level of student learning and the learning outcomes of study programs. The development of valid and reliable tests is required to achieve valid and reliable measurement of student learning and program learning outcomes. The test should be able to assess student performance across all dimensions of knowledge, skill, and attitude.

The well-planned test construction contributes to the test's overall quality in terms of test content validity, difficulty level, discrimination power, and test reliability. Test preparation is a difficult task that requires careful planning and guidelines to make it simple. The preparation of a test blue print is required for test construction. A test blueprint is a detailed plan that explains how to create a test. The term refers to an assessment map or specification that ensures that all aspects of the curriculum and educational domains are covered by assessment programs over a specified time period. It assists curriculum developers/test developers in matching various competencies with course content and the appropriate mode of assessment.
In general, a test blueprint will assist in ensuring that tests: 1) Assess the achievement of the course's instructional objectives; 2) Reflect key course goals, objectives, and the material learned or covered during the instruction period; and 3) Include the appropriate item formats in addition to the knowledge and skills being assessed.

Keeping this in mind, the team created this test blueprint document to assist test developers or content specialists in their process of creating valid and reliable tests. The core competencies that have already been identified for the themes of courses, the course contents, course credit hours, and the learning outcomes with their corresponding levels of achievement by learning domains were the major points considered in the process of preparing this test blue print guideline. In accordance with these, the number of test items that should adequately assess students' performance in all content topics will be determined through consultation with the content specialists who create the blueprint and test for their corresponding study program.

Therefore, the main purpose of this manual is to give direction on how to develop blueprint for content specialists so that they can develop a test blueprint for their respective program

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2. Objective/ Significance of Test Blueprint Preparation

2.1. Objective of test blueprint document

Test blueprint preparation is commonly used to aid in the preparation of a test that is representative, broadly sampled, and includes the entire knowledge domain expected of Ethiopian higher education students upon completion of their study program.

The specific objectives of test blueprint are to:

- ✓ Facilitate the construction of a representative and balanced test items for the selected courses in accordance with the competencies identified.
- ✓ Guide test developers or writers to write or set appropriate test items.

2.2. Significance of the Test Blueprint document

Test blueprint can be a guideline to prepare the exit exam items with regard to the identified core competences for the selected courses. It enables the exit exam preparing committee to be smart and assist them while preparing the items. Moreover, test blueprint maintains the consistency of the questions over different universities sticking on the same competences and objectives. In general, test blueprint makes clear where, how and what questions are prepared to evaluate the graduating class which most likely can reduce the confusion of the exit exam.

3. Expected Profiles of Graduates

In general, the intended graduate of Agricultural Economics is expected to develop economic information on farm production methods and technologies; the structure and efficiency of the agricultural system; production linkages with processing, distribution, and final consumer demand; agricultural trade and policy to assist farmers, agribusiness, and consumers in decision-making; and to prepare dynamic careers in business.

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The curriculum combines economics and agricultural fundamentals with insights into the dynamic social, technological, and environmental forces that shape production and marketing decisions. Thus, the program aims to produce qualified professionals who are knowledgeable, skilled and capable to work with appropriate and desired attitude. The Agricultural Economics graduates are expected to involve in different tasks in the Agricultural and related sectors which demand their expertise. The graduate/ professional profile of Agricultural Economics includes the ability to:

- Design, implement and evaluate agricultural development programs and projects;
- Enhance sustainable agricultural development through effective and efficient mobilization and utilization of the scarce resources;
- Undertake feasibility studies to advise investors, financial institutions, agriculture and allied sectors;
- Undertake research and advise policy makers;
- Develop plans and strategies to enhance agricultural development;
- Advocate commercial agriculture, sustainable farming system and rural institutions for the sustainable development of the country.
- Promote national and international agricultural trade;
- Train and advise small scale farmers and agricultural enterprises; and
- Teach at higher education and technical and vocational training institutions.

After successful completion of the training, the graduates are expected to gain the following competence: -

❖ **Knowledge**

- Participate in design, implementation and evaluation of agricultural development projects;
- Apply effective and efficient resource utilization theories and practices for sustainable agricultural development;

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- Involve in feasibility studies and advise investors, financial institutions, agriculture and allied sectors;
- Assist researchers and policy makers in agricultural production and productivity; marketing and sustainable use of natural resource and environment;
- Train and advise small scale farmers and agricultural entrepreneurs;
- Serve as planners in agricultural offices;
- Manage small scale farms and agricultural enterprises;
- Work as agricultural expert team leader, market expert, bank manager, policy maker and loan officer; and
- Assist teaching at higher institutions, and technical and vocational training institutions.
- Formulate and advocate climate change and agricultural development policies and strategies

❖ **Skills**

- Use conceptual skill in understanding the complex interrelationship between agriculture sector and with the other economic sectors.
- Use marketing intelligence skills in acquiring, analysing and disseminating agricultural development and marketing information.
- Practice analytical skills of research methodology, economic models and software's in the efficient resource utilization, agricultural development, marketing and business research and innovation activities.

❖ **Attitude**

- Perceive the importance of agricultural development for economic growth of a country.
- Appreciate agricultural development in social, economic, environmental, cultural and political context.
- Develop sense of enthusiasm to work with farmers, traders, bankers

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and managers in agricultural economics areas.

- Appreciate the agricultural profession and to be dedicated agricultural economics who love his profession.

4. Objective of the program

4.1. General objectives

- Understand theories of costs and production and apply economic principles in resource optimization.
- Understand theories of elasticities and market failures
- Understand and apply national income account
- Analyze monetary and fiscal policy and growth and development issues
- Explain economic growth and development theories and evaluate economic development policy.
- Economic valuation and management of natural and environmental resources.
- Understand, estimate and predict economic variables using regression.
- Apply linear and non-linear programming model for optimal resource allocation.
- Prepare appropriate research design.
- Understand international trade, economic growth and international trade agreements.
- Understand market, pricing decision and marketing margins of agricultural products
- Understand agricultural project preparation, appraisal and cost benefits analysis
- Apply system approach and sustainable livelihood framework and farming system research and extension.
- Farm business management and optimum resources allocations.

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4.2. Specific objectives

The specific objectives of this academic program are to:

- Understand theories and different types of production relationships.
- Apply economic principles and theories for optimum resource allocation and utilization.
- Understand theory of costs and cost curves with production curves.
- Understand elasticities of input substitutions, technological progress and income distributions.
- Understand why market fails and how government react.
- Describe the application of national income accounting system.
- Explain how aggregate variables are measured and related to each other.
- Discuss how the equilibrium real GDP and price level determined from the interaction of aggregate demand and supply curves.
- Explain the IS and LM curves and how the monetary and fiscal policy instruments stabilize the economy.
- Explain growth and development issues in macroeconomics.
- Explain basic concepts of economic and participate in development policy formulation and evaluation.
- Discuss various theories of economic growth and development.
- Introduce the economic foundations of environmental and natural resources management using some of the major issues which threaten the environment today, locally and globally (e.g. soil erosion, deforestation, global warming, water pollution etc.).
- Examine the main tools and techniques that have been developed by economics to assess environmental.
- Understand and apply the methodology of Econometrics for their research project.

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- Estimate and use regression model using the real data and interpret the result.
- Use estimated equations to make predictions and forecasting.
- Develop/ formulate regression models based on theory in their field of study.
- Enable students to acquire knowledge and techniques of optimization and apply in solving problems in their field of study.
- Propose suitable decisions to resolve conflicts of interest among various sections of the organizations by seeking out optimal solution.
- Apply linear programming and non-linear programming model for analyzing operational problems in business (particularly in agricultural firms).
- Construct an effective sampling procedures and data collection tools for both qualitative and qualitative research.
- Apply quantitative and qualitative data analysis methods.
- Evaluate the effects of various trade policy instruments on welfare of trading partners.
- Understand the role of multilateral trade negations and the proliferation of regional and bilateral agreements.
- The effects of international trade on economic growth and development.
- Understand markets and marketing concepts in agriculture.
- Use pricing strategies and marketing orientations for effective market performance.
- Identify marketing channels, costs and margins at different marketing stages.
- Use marketing communication and conduct.
- Understand the different aspects of project preparation and analysis.
- Identify different approaches to cost-benefit analysis of agricultural projects.
- Get an understanding about the different methods of selecting or appraising agricultural projects.

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- ❖ Apply systems approach to research and development.
- ❖ Apply sustainable livelihood framework in farming system research and extension activities.
- ❖ Identify various production relations in pursuit of optimal resources combination that suites specific farm situation.
- ❖ Apply economic principles and theories for optimum resource allocation and utilization.
- ❖ Apply farm planning and budgeting techniques in farm management decision-making.
- ❖ Apply management science and economics tools to solve farm related problems.
- ❖ Analyze farm business investment opportunities for effective farm planning.
- ❖ Prepare farm plan and recommend on the feasible alternative activities.

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5. Themes and courses to be included in the exit exam

Table 1: themes and course included in the exit exam

S.no	Themes	Lists of selected courses	Cr.hrs	Remarks
1	**Economics**	Microeconomics I	3	
		Microeconomics II	3	
		Macroeconomics I	3	
		Macroeconomic II	3	
		Development Economics	3	
		Natural Resource and	3	

		Environmental Economics		
2	**Research**	Econometrics	4	
		Research Methods in Agricultural Economics	3	
		Operational Research	3	
3	**Marketing**	International Agricultural Trade	3	
		Agricultural Marketing	3	
4	**Agriculture and policy**	Agricultural Project Planning and Analysis	3	
		Farming Systems and Livelihood Analysis	3	
		Farm management	3	
Total Credit Hour			43	

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6. Share of the Themes/Courses/Items in Percentage (%)

Table 2 Share of the Themes/Courses/Items in Percentage

Themes	Course Name	Credit hour	Weight of course or proportion	Number of test items from each course	**Cognitive**						**Affective**	**Psychomotor**	Total
					Remember	Understa-	Apply	Analyze	Evaluate	Create			
Economics 41.86%	Microeconomics-I	3	3/18=0.167	0.167*41.86 = 7	1	4	2	-	-	-	-	-	7
	Microeconomic-II	3	3/18=0.167	0.167*41.86 = 7	1	2	2	2		-	-	-	7
	Macroeconomics-I	3	3/18=0.167	0.167*41.86 = 7	-	2	2	2	1	-	-	-	7
	Macroeconomics-II	3	3/18=0.167	0.167*41.86= 7	-	1	2	2	2	-	-	-	7
	Development Economics	3	3/18=0.167	0.167*41.86 = 7	-	2	-	1	2	1	1	-	7
	Natural Resources and Environmental Economics	3	3/18=0.167	0.167*41.86 = 7	1	2	-	2	1	-	1	-	7
	Theme one total credit	**18**											
Research 23.25%	Econometric	4	4/10 = 0.4	0.4*22.25%= 9	-	2	2	2	-	1	-	2	9
	Operational research	3	3/10 = 0.3	0.3*22.25%= 7	-	1	2	1	1	1	-	1	7
	Research Methods in Agricultural Economics	3	3/10 = 0.3	0.3*22.25 = 7	-	1	1	1	1	1	1	1	7
	Theme two total credit	**10**											
Marketing 13.95%	International Agricultural Trade	3	3/6 = 0.5	0.5*13.95 = 7	-	2	-	2	2	1	-		7
	Agricultural Marketing	3	3/6 = 0.5	0.5*13.95= 7	-	2	1	1	1	-	-	2	7
	Theme three total credit	**6**											

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Agriculture and Policy 20.93%	Agricultural Project Planning and Analysis	3	3/9 = 0.33	0.33*20.95 = 7	1	2	-	2	-	-	1	1	7
	Farming System and Livelihood Analysis	3	3/9 = 0.33	0.33*20.95 = 7	-	1	3	1	1	-	-	1	7
	Farm Management	3	3/9 = 0.33	0.33*20.95 = 7	-	-	2	1	1	1	1	1	7
	Theme three total credit	**9**											
Total for the program		**43**			4	24	19	20	13	6	5	9	100

7. Test blueprint Table (Table of Specification)

Table 3: Test Blue-Print table

Themes	Name of Courses	Credit hour	Share of the themes in %	General Objective/ Expected Competencies to be measured	Specific Objectives/ Learning outcomes	Learning outcomes								No. of items
						Cognitive						Affective	Psychomotor	
						Remembering	Understanding	Appling	Analysis	Evaluation	Creation/			
Economics	Microeconomics-I	3	$\frac{18}{43} x 100$	Understand theories of costs and production and apply economic principles in resource optimization	Understand theories and different types of production relationships	1	2							
					Apply economic principles and theories for optimum resource allocation and utilization			2						
					Understand theory of costs and cost curves with production curves		2							
	Microeconomic-II	3		Understand theories of elasticities and market failures	Understand elasticities of input substitutions, technological progress and income distributions			2	2					

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					Understand why market fails and how government react	1	2							
	Macroeconomics-I	3		Understand and apply national income account	Describe the application of national income accounting system;		2							
					Explain how aggregate variables are measured and related to each other			1	1	1				
					Discuss how the equilibrium real GDP and price level determined from the interaction of aggregate demand and supply curves			1	1					
	Macroeconomics-II	3		Analyze monetary and fiscal policy and growth and development issues	Explain the IS and LM curves and how the monetary and fiscal policy instruments stabilize the economy	1		1	1	1				
					Explain growth and development issues in macroeconomics.		1	1	1					
	Development Economics	3		Explain economic growth and development theories and evaluate economic development policy	Explain basic concepts of economic and participate in development policy formulation and evaluation		1		1	1	1	1		
					Discuss various theories of economic growth and development		1			1				

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	Natural Resources and Environmental Economics	3		Economic valuation and management of natural and environmental resources	Introduce the economic foundations of environmental and natural resources management using some of the major issues which threaten the environment today, locally and globally (e.g. soil erosion, deforestation, global warming, water pollution etc.);	1	1					1		
					Examine the main tools and techniques that have been developed by economists to assess environmental problems and formulate sustainable management strategies;				1					
							1		1	1				
Research	Econometric	4	$\frac{10}{43} x 100$	Understand, estimate and predict economic variables using regression	Understand and apply the methodology of Econometrics for their research project		1							
					Estimate and use regression model using the real data and interpret the result,		1	1	1					
					Use estimated equations to make predictions and forecasting			1	1			1		
					Develop/ formulate regression models based on theory in their field of study							1	1	
	Operational research	3		Apply linear and non-linear programming model for optimal resource allocation	Enable students to acquire knowledge and techniques of optimization and apply in solving problems in their field of study.		1							
					Propose suitable decisions to resolve conflicts of interest among various sections of the organizations by seeking out				1	1				

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					optimal solution									
					Apply linear programming and non-linear programming model for analyzing operational problems in business (particularly in agricultural firms)			2			1		1	
	Research Methods in Agricultural Economics	3		Prepare appropriate research design	Construct an effective sampling procedures and data collection tools for both qualitative and qualitative research		1			1	1	1		
					Apply quantitative and qualitative data analysis methods			1	1				1	
Marketing	International Agricultural Trade	3	$\frac{6}{43}x100$	Understand international trade, economic growth and international trade agreements	Evaluate the effects of various trade policy instruments on welfare of trading partners				1	1				
					Understand the role of multilateral trade negations and the proliferation of regional and bilateral agreements		1				1			
					The effects of international trade on economic growth and development		1		1	1				
	Agricultural Marketing	3		Understand market, pricing decision and marketing margins agricultural products	Understand markets and marketing concepts in agriculture		1							
					Use pricing strategies and marketing orientations for effective market performance;			1					1	
					Identify marketing channels, costs and margins at different marketing stages		1		1	1				
					Use marketing communication and conduct								1	
Agriculture and Policy	Agricultural Project Planning and Analysis	3	$\frac{9}{43}x100$	Understand agricultural project preparation,	Understand the different aspects of project preparation and analysis	1	1							
					Identify different approaches				1				1	

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				appraisal and cost benefits analysis	to cost-benefit analysis of agricultural projects;									
					Get an understanding about the different methods of selecting or appraising agricultural projects.		1		1			1		
	Farming System and Livelihood Analysis	3		Apply system approach and sustainable livelihood framework and farming system research and extension	Apply systems approach to research and development		1	1	1					
					Apply sustainable livelihood framework in farming system research and extension activities			2		1			1	
	Farm Management	3		Farm business management and optimum resources allocations	Identify various production relations in pursuit of optimal resources combination that suites specific farm situation,				1					
					Apply economic principles and theories for optimum resource allocation and utilization			1						
					Apply farm planning and budgeting techniques in farm management decision-making			1						
					Apply management science and economics tools to solve farm related problems,							1		
					Analyze farm business investment opportunities for effective farm planning,					1	1			
					Prepare farm plan and recommend on the feasible alternative activities.								1	
Total						4	24	19	20	13	6	5	9	100

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8. Summary of Learning outcomes in terms of the three domains (Cognitive, Affective and Psychomotor)

Table 4: Summary of learning outcomes in terms of the three domains

					Share of Competencies (in %)			Remark
Themes	Course Name	Credit hour	Weight of course or proportion	Number of test items from each course	**Knowledge**	**Skill**	**Attitude**	
Economics 41.86%	Microeconomics-I	3	3/18=0.167	0.167*41.86 = 7	8.14%			
	Microeconomic-II	3	3/18=0.167	0.167*41.86 = 7	8.14%			
	Macroeconomics-I	3	3/18=0.167	0.167*41.86 = 7	8.14%			
	Macroeconomics-II	3	3/18=0.167	0.167 *41.86= 7	8.14%			
	Development Economics	3	3/18=0.167	0.167*41.86 = 7	6.98%		20%	
	Natural Resources and Environmental Economics	3	3/18=0.167	0.167*41.86 = 7	6.98%		20%	
	Theme one total credit	**18**						
Research 23.25%	Econometric	4	4/10 = 0.4	0.4*22.25% = 9	8.14%	22.22%		
	Operational research	3	3/10 = 0.3	0.3*22.25% = 7	6.98%	11.11%		
	Research Methods in Agricultural Economics	3	3/10 = 0.3	0.3*22.25 = 7	5.81%	11.11%	20%	
	Theme two total credit	**10**						
	International	3	3/6 = 0.5	0.5*13.95 =	8.14%			

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Marketing 13.95%	Agricultural Trade			7				
	Agricultural Marketing	3	3/6 = 0.5	0.5*13.95= 7	5.81%	22.22%		
	Theme three total credit	**6**						
Agriculture and Policy 20.93%	Agricultural Project Planning and Analysis	3	3/9 = 0.33	0.33*20.95 = 7	5.81%	11.11%	20%	
	Farming System and Livelihood Analysis	3	3/9 = 0.33	0.33*20.95 = 7	6.98%	11.11%		
	Farm Management	3	3/9 = 0.33	0.33*20.95 = 7	5.81%	11.11%	20%	
	Theme three total credit	**9**						
Total for the program		**43**			100%	100%	100%	

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9. Conclusions

Exit examinations can play an important role in producing graduates who are knowledgeable, skilled, and emotionally mature. It helps to prepare competent graduates by acting as a quality check for effectiveness. It also aids in the enhancement of the quality and effectiveness of academic programs. Furthermore, it can serve as a platform for academic programs at various universities to collaborate in order to improve program quality. As a result, this document has been created to aid in the establishment of exit examinations for all programs offered by the Ministry of Education. For 2015 EC graduating students, exit exam competency selection and identifying core courses were done to meet the graduation profile, competency, and learning outcome. As a result, preparing test blueprint is necessary to prepare fairly distributed items based on the above criteria.

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