



Ministry of Education

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

Band:I

**Program: - Bachelor of Science Degree in Construction Technology and
Management**

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1. Introduction

Starting from 2015 E.C, the Ministry of Education is introducing an exit examination for most of the undergraduate programs in the universities of Ethiopia. Therefore, it is vital to create blueprint for the exit exam.

Creating a test blueprint will help you plan which questions to include in your exam and ensure that it adequately assesses the learning objectives of the course. A test blueprint defines the knowledge and skills you want to assess and will enable you to build purpose-driven, successful assessments. A blueprint may also help you identify areas where your question pool may be lacking.

2. Objectives/ significance of the test blueprint preparation

Test blueprint preparation is generally opted to assist the preparation of a test that is representative, broadly sampled, and consisting of complete knowledge domain expected of the Ethiopian higher education students on 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.

3. Expected profile of the graduate

- Ability to apply knowledge of mathematics, statistics, science, management, economics, and engineering.
- Ability to design, construct, and supervise different construction engineering works, as well as to analyze and interpret data.
- Ability to function on multi-disciplinary teams.
- Ability to identify, formulates, analyze and solve construction sector problems.
- Understand professional and ethical responsibility.
- Ability to communicate effectively.
- Knowledge of up-to-date issues.

- Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- Understanding and working knowledge of safety and environmental aspects of construction technology & management practices.
- Able to develop effective planning systems of project management to improve productivity.
- Be able to conduct experiments, basic and applied research in relation to construction industries to solve various organizational and social problems.
- Ability to teach the fundamentals of construction technology & management courses.
- Keep abreast of new technologies in construction technology & management. Also to provide orientation and/or training to subordinates as required.
- Able to apply state-of-the-art software in construction management.

4. General Objective

The objective of this B.Sc. program is to produce outstanding construction technology and management graduates who have been prepared to become technological, managerial and public service leaders capable of understanding the social and environmental challenges that face the country, and who will be in a position to make a meaningful contribution to both national social and economic growth and development as well as being able to respond to, and benefit from, the impact of global change. The institute and the staff are committed to creating a learning environment that provides a level of knowledge and competency in these areas, through an innovative program of study, supported by a capability in information technology use, coupled with a capacity to integrate the key social and environmental issues facing the country.

The program is aimed primarily at training professionals required for managing constructing projects with efficient and effective management system, administer contracts, conduct researches to identify real problems on site pertaining to construction management, methods & materials, and find better solutions. It will produce well qualified managing engineer knowledgeable in construction engineering areas of structural, geotechnical and highway engineering, at the same time those graduates will also have extensive knowledge of construction technology and project management skills, and can be actively engaged in the planning, development and management of construction/infrastructure projects.

5. Specific objective

The specific objective of the COTM program students is to manage construction projects successfully through the application of knowledge, skills and attitudes learned during their stay by contributing to the development and construction of projects as per required quality, cost (Budget), completing on time and keeping safety for workers, the general public, end users and environment.

6. Themes and list of courses

The Ministry of Education suggests that the exit exam should contain 10 to 15 Courses from a given program. However, the team strongly believes at least the listed 16 courses are mandatory to measure the competency of undergraduates. The working team has identified the following 16 courses into 4 themes that can be included in the exit exam in Ethiopia starting from the 2015 E.C.

Theme one (Construction Engineering)

- ☞ Design of Reinforced Concrete Structures
- ☞ Design & Construction of Water Works
- ☞ Highway Engineering, I & II
- ☞ Foundation Engineering

Theme two(Construction Technology)

- ☞ Construction Materials I & II
- ☞ Building construction, I & II
- ☞ Modern Construction Technology and BIM

Theme three(Construction planning, estimating and controlling)

- ☞ Construction Specification and Quantity Surveying
- ☞ Financial Management in Construction
- ☞ Construction Equipment & plant management
- ☞ Cost Engineering
- ☞ Construction Planning and Scheduling
- ☞ Construction Performance & Resource Optimization

Theme Four(Construction Supervision and contract administration)

- ☞ Health and Safety Management in Construction
- ☞ Construction Procurement and Contract Management
- ☞ Construction site supervision

7. Total credit hours of the selected courses

The working team has identified 16 core and major courses for the exit exam which are categorized in four areas namely Construction technology (19%), Construction Engineering (25%), construction planning, estimating and controlling (37%), and Construction Supervision and contract administration (19%) themes based on the MoSHE Curriculum.

Construction Engineering(25%)	Construction Technology(19%)	Construction Plan., Est. & Control(37%)	Construction Supervision and contract administration(19%)
• Design of Reinforced Concrete Structures(3) • Design & Construction of Water Works(3) • Highway Engineering, I & II(6) • Foundation Engineering(3)	• Construction Materials I & II(3) • Building construction, I & II(6) • Modern Construction Technology and BIM(3)	• Construction Specification and Quantity Surveying(4) • Financial Management in Construction(3) • Construction Equipment & plant management(3) • Cost Engineering(3) • Construction Planning and Scheduling(4) • Construction Performance & Resource Optimization(3)	• Health and Safety Management in Construction(3) • Construction Procurement and Contract Management(3)t • Construction site supervision(2)

8. Share of the themes/ courses/items in percentage

The Ministry of Education suggests that the exit exam should contain 10 to 15 Courses from a given program.. The working team has identified the following 16 courses into 4 themes; (i) Construction Engineering; (ii) Construction Technology; (iii) Construction Planning, Estimating, and controlling; (iv) construction supervision and contract administration can be included in the exit exam in Ethiopia starting from the 2015 E.C.

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

- Share of themes (T) = $\frac{a}{b} \times 100$, Where “a” is the credit hour of a theme and “b” is the total credit hour of the program. The credit hour of a theme is the sum of credit hours of courses in the theme.
- Share of courses per theme (C) = $\frac{\text{Credit hour of the course}}{\text{Credit hour of the theme}} \times 100$

- Share of items per course = *Share of the course X Total number of items*

I. Share of Construction Engineering themes (T) = $\frac{15}{58} \times 100 = 25.8\%$

- a) Design of Reinforced Concrete Structure per theme (C) = $\frac{3}{15} \times 100 = 20\%$
- b) Design & Construction of Water Works per theme (C) = $\frac{3}{15} \times 100 = 20\%$
- c) Highway Engineering, I & II per theme (C) = $\frac{6}{15} \times 100 = 40\%$
- d) Foundation Engineering per theme (C) = $\frac{3}{15} \times 100 = 20\%$

II. Share of Construction Technology themes (T) = $\frac{15}{58} \times 100 = 25.8\%$

❖ Share of the courses

- e) Construction Materials I & II (C) = $\frac{6}{15} \times 100 = 40\%$
- f) Building construction, I & II (C) = $\frac{6}{15} \times 100 = 40\%$
- g) Modern Construction Technology and BIM (C) = $\frac{3}{15} \times 100 = 20\%$

III. Share of Construction Planning, Estimating, and controlling themes (T) = $\frac{20}{58} \times 100 = 34.5\%$

- h) Construction Specification and Quantity Surveying (C) = $\frac{4}{20} \times 100 = 20\%$
- i) Financial Management in Construction (C) = $\frac{3}{20} \times 100 = 15\%$
- j) Construction Equipment & plant management (C) = $\frac{3}{20} \times 100 = 15\%$
- k) Cost Engineering (C) = $\frac{3}{20} \times 100 = 15\%$
- l) Construction Planning and Scheduling (C) = $\frac{4}{20} \times 100 = 20\%$
- m) Construction Performance & Resource Optimization (C) = $\frac{3}{20} \times 100 = 15\%$

IV. Share of construction supervision and contract administration themes (T) = $\frac{8}{58} \times 100 = 13.7\%$

- n) Health and Safety Management in Construction (C) = $\frac{3}{8} \times 100 = 37.5\%$
- o) Construction Procurement and Contract Management (C) = $\frac{3}{8} \times 100 = 37.5\%$
- p) Construction site supervision (C) = $\frac{2}{8} \times 100 = 25\%$

8.2. Share of Items per Course

Share of items per course = *Share of the course X Total number of items*

8.2.1. Theme one (Construction Engineering)=25.8

- I. Design of Reinforced Concrete Structures= $0.2 \times 25.8 = 5$
- II. Design & Construction of Water Works= $0.2 \times 25.8 = 5$
- III. Highway Engineering, I & II= $0.4 \times 25.8 = 10$
- IV. Foundation Engineering= $0.25 \times 25.8 = 5$

Theme two(Construction Technology)=25.8

- I. Construction Materials I & II= $0.4 \times 25.8 = 10$
- II. Building construction, I & II= $0.4 \times 25.8 = 10$
- III. Modern Construction Technology and BIM= $0.2 \times 25.8 = 5$

Theme three(Construction planning, estimating and controlling)=34.5

- I. Construction Specification and Quantity Surveying= $0.2 \times 34.5 = 7$
- II. Financial Management in Construction= $0.15 \times 34.5 = 5$
- III. Construction Equipment & plant management= $0.15 \times 34.5 = 5$
- IV. Cost Engineering= $0.15 \times 34.5 = 5$
- V. Construction Planning and Scheduling= $0.2 \times 34.5 = 7$
- VI. Construction Performance & Resource Optimization= $0.15 \times 34.5 = 5$

Theme Four(Construction Supervision and contract administration)=13.7

- ☞ Health and Safety Management in Construction= $0.375 \times 13.7 = 5$
- ☞ Construction Procurement and Contract Management= $0.375 \times 13.7 = 5$
- ☞ Construction site supervision= $0.25 \times 13.7 = 4$

9. Learning outcomes in terms of the three domains(Cognitive, Affective, Psychomotor

I. The cognitive domain

The cognitive domain aims to develop the mental skills and the acquisition of knowledge of the individual. The cognitive domain encompasses of six categories which include knowledge; comprehension; application; analysis; synthesis; and evaluation. Knowledge includes the ability of the learner to recall data or information. This is followed with comprehension. Which assesses the ability of the learner to understand the meaning of what is known. This is the case where a student is able to explain an existing theory in his or her own words (Anderson et al, 2011). This is followed by application which shows the ability of the student to use abstract knowledge in a new situation. The Affective domain

The affective domain includes the feelings, emotions and attitudes of the individual. The categories of affective domain include receiving phenomena; responding to phenomena; valuing; organization; and characterization (Anderson et al, 2011). The sub domain of receiving phenomena creates the awareness of feelings and emotions. As well as the ability to utilize selected attention. This can include listening attentively to lessons in class. The next sub domain of responding to phenomena involves active participation of the learner in class or during group discussion (Cannon and Feinstein, 2005).

II. The psychomotor domain

The psychomotor domain includes utilizing motor skills and the ability to coordinate them. The sub domains of psychomotor include perception; set; guided response; mechanism; complex overt response; adaptation; and origination. Perception involves the ability to apply sensory information to motor activity. For instance, a student practices a series of exercises in a text book with the aim of scoring higher marks during exams. Set, as a sub domain, involves the readiness to act upon a series of challenges to overcome them. In relation to guided responses, it includes the ability to imitate a displayed behavior or utilize a trial and error method to resolve a situation (Sousa, 2016).

9. Test blueprint table

Test Blueprint (Table Specification) for BSC in Construction Technology and Management

Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
Theme One Share = 25.8 items from the total	1. Design of Reinforced Concrete Structure	To familiarize students with concepts related to strength and mechanics of materials, analysis of structures, material selection and design of structures, for their behavior under Loading.	3	3/15 =0.2	0.2*25.8 = 5	Addressing the concepts of structural design	-	1	''	''	''	''	-	''	1
						Introducing students to the basic mechanics of reinforced concrete elements		1	''	''					1
						Transferring knowledge about design of reinforced concrete line elements:-Beam & Column							1		1
						Enabling students get used to basic analysis and design feature on reinforced concrete plane element					2				2
	2 Design & Construction of Water Works	To understand the basic of water works planning, design and construction Procedures.	3	3/15 = 0.2	0.2*25.8 = 5	Identify the different types of dams. its various components, construction concepts		1							1
						Determine the force acting on a gravity dam and analyze dam stability, ancillary structures (spillway, energy dissipator, outlet works) and river diversion during construction					2				2
						Understand the planning and working principle of hydropower systems		1							1
						Determine the various components of irrigation structures, methods, efficiencies and how to compute the crop water requirements				2					2
	3. Highway Engineering, I & II	The course provides a breadth of knowledge and skill in the major areas associated with the design, construction, and	6	6/ 15= 0.4	0.2*25.8 = 10	Understand the essential components of a Highway and basic elements of Highway Engineering and Geometric design of highway components.		1							1

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Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
		maintenance of transport systems infrastructure.				Understand the principles and consideration of Highway draining elements.		1							1
						Perform road pavement design and analysis					2				2
						Identify different layers of a Road pavement		1							1
						Clearly identify different types of road pavement materials and their properties Understand the basics of Pavement design				1					1
						Understand the methods of Construction of different layers of Road, Techniques, Technologies and practice		1							1
						Be familiarized with the Standard Specifications and Manuals of Ethiopia (ERA, AACRA...)			1						1
						Conduct condition survey of pavements Volume computation of highway earthwork; mass haul diagram				1					1
						Select the appropriate materials for use in different road layers			1						1
						Evaluate the quality and performance of unbound and bound road materials					1				1

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Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
	4.Foundation Engineering	To understand the basics of site or soil exploration and defining the geotechnical engineering properties of the profile and computing bearing capacity making use of the parameters obtained from the exploration in accordance with the relevant code provisions. Design and / or construction of foundations, retaining structures and safety structures is also discussed.	3	3/15 = 0.2	0.2*25.8 = 5	Understand the necessity of soil investigation program, able to determine suitable methods, depth and spacing of boreholes.		1							1
						Select and design shallow foundations. Introduce the circumstances where deep foundations are necessary			1						1
						Design retaining structures for stability and structural safety.						1			1
						basic knowledge of design and construction of pile foundations		1							1
						Identify the causes, problems associated with expansive soils and discuss remedies for problems posed by it.				1					1
	Theme one total credit		15												
Theme Two	1 Construction Materials I & II	This course introduces the production, nature, and characteristics of different construction materials and identifying them with respect to their suitability to different engineering structures based on their quality of strength, texture, nature of production/formation etc.	6	6/15 = 0.4	0.4*25.8 = 10	Understand the Production process, properties, classification, and application/use of construction materials.		1							1
Understand the Production, classification/types, and use of binding materials: Lime, Gypsum and Cement Masonry construction units: Various types of stones, Concrete Blocks and fired clay products and their application in construction.						1	2								3
Properties and applications of Paints, varnishes and distempers, Glass and composite materials								1							1

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Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
2. Building construction, I& II		Students will be able to make component design, execute and supervise the developments of building components. And initiate effective methods to manage building projects.	6	6/15 = 0.4	0.4*25.8 = 10	understand the processes involved in the production of concrete, properties of fresh concrete, strength and properties of hardened concrete and to perform lab tests over fresh and hardened concrete		2		1					3
						To comprehend the use of metals and alloys as construction materials		1							1
						To throw light on use of timber and asphalt as construction materials, and to perform lab tests on timber and asphalt		1							1
					0.4*25.8 = 10	Comprehend the construction aspects of foundations, walls, walls, floors, staircases, doors and windows, lintels, arches, roofs, roof coverings. Plastering, finishing. RC and steel framed structures.	1	2		1					4
						Comprehend the construction aspects of joints in structures.		1							1
						Ability to develop standard building construction details.					1	1			2

Test Blueprint (Table Specification) for BSC in Construction Technology and Management

Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
						Comprehend the construction aspects of Elevators, escalators Balconies, Loggias, canopy and terraces Flues and Fireplaces, Damp proofing, Built-in furniture, Kitchen appliances installations in building construction Paving, gardening drainage, fences, sewerage lines/septic tank electrical and lavatory fixtures.		3							3
	3 Modern Construction Technology and BIM	This course is framed for the concepts, methodologies/tools and processes required for designing, building and operating sustainable structures, and evaluating their resource-efficiency (e.g. energy, cost and water efficiency), as well as environmental and socio-economic performance in various stages of their operation and overall lifecycle.	3	3/15 = 0.2	0.2*25.8 = 5	Comprehend the construction aspects of RC framed structures, monolithic construction, prefabricated construction systems, construction of shells, domes, formwork, scaffolding, shoring and underpinning		1							1
						Comprehend the maintenance aspects of roads and bridge structures, repair and rehabilitation of structures.		1							1
						Gain knowledge on the implementation of BIM concepts throughout the lifecycle of a building, from planning and design, to construction and operations.		1							1
						Understand BIM Basics & the Benefits Describe how BIM can be used as a communication and collaboration tool, and its contributions to Scheduling, Estimating, and Facility Management.		1							1

Test Blueprint (Table Specification) for BSC in Construction Technology and Management

Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
						Explain the process of implementing BIM and how BIM-based designs for Structural, Mechanical, Electrical, Plumbing, Communications, Security, Fire Protection fit into the overall Construction Document fabric			1						1
	Theme two total credit		15												
Theme Three Share = 34.5 items from the total	1 Construction Specification and Quantity Surveying	Understand different types of specification, know how to assure and control quality of construction materials and construction products. Prepare specifications and BoQ for construction projects. Work out quantity and types of material, manpower, and equipment needed for construction projects Determine rates for construction activities using detailed cost estimation. Advice stake holders on preliminary and final costs of projects. Prepare payment certificates and final accounts of projects	4	4/20 = 0.2	0.2*34.5 =8	Understand different types of specification, know how to assure and control quality of construction materials and construction products		1							1
						Prepare specifications and BoQ for construction projects.				2					2
						Work out quantity and types of material, manpower, and equipment's needed for construction projects				2					2
						Determine rates for construction activities using detailed cost estimation.				1					1
						Advice stake holders on preliminary and final costs of projects.			1						1
						Prepare payment certificates and final accounts of projects.						1			1

Test Blueprint (Table Specification) for BSC in Construction Technology and Management

Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
	2 Financial Management in Construction		3	3/20 = 0.15	0.15*34.5 = 5	able to understand: Functions & goal of financial management		1							1
						Financing decisions, means of finance securities				1					1
						Capital requirement of a firm, Financial statement & analysis				1					1
						Concepts of time value of money and cash flow diagram		1							1
						Technics for projects investment appraisal and working capital management.					1				1
	3 Construction Equipment & plant management	Students acquire management skills of construction equipment and methods employed in different sectors of the construction industry including buildings, heavy-highway, and utilities construction. Includes earthmoving operations, appropriate equipment selection, operating costs, and fleet management.	3	3/20 = 0.15	0.15*34.5 = 5	acquire management skills of construction equipment and methods employed in different sectors of the Construction industry including buildings, heavy-highway, and utilities construction. Includes earthmoving operations,		2							2
						appropriate equipment selection, operating costs, and fleet management.					3				3
	4 Cost Engineerng	Tender and pre-tender cost estimating: price forecasting, cost norms, price indices, construction price analysis, and synthesis of unit rates for	3	3/20 = 0.15	0.15*34.5 = 5	Understand the importance of cost engineering and Understand the basic nature of costs and Know the cost estimating techniques and study their importance in construction life cycle		1							1

Test Blueprint (Table Specification) for BSC in Construction Technology and Management

Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
		construction trade, fixed and variable construction costs, risk-return assessment, Cost Controlling Mechanisms, Value engineering Use of computer software for cost engineering				Identify the risk involved (in terms of cost) in contract forms and make proper arrangements and Discuss different types of cost estimates and methods for preparing Them and Understand key factors for detail cost estimate		1							1
						Execute detailed cost calculation and able to analyze the Life Cycle Costs (LCC)				1					1
						Explain different construction cost components incurred in construction Projects and Explain different cost estimating tools/software		1							1
						Understand cost control and tracking methods to monitor and control project budgets for successful project outcomes and Describe how project management software can assist in project cost management.		1							1
						know the significance of applications of project planning and scheduling theory in practices of construction projects and Understand fundamentals of project planning and management		1							1
	5 Construction Planning and Scheduling	The general objective of this course is to equip students with the necessary knowledge, skill and practices of project planning and scheduling in practices of construction industry. Supported with a planning software, it helps the	4	4/20 = 0.2	0.2*34.5 = 7	Understand project scheduling techniques and practices and Identify the need of construction planning in construction projects		1							1

Test Blueprint (Table Specification) for BSC in Construction Technology and Management

Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
		students to acquire knowledge of the fundamentals of project management in order to develop successful project plans and schedules with the monitoring and controlling techniques.													
						Able to prepare, read and interpret construction activities, scheduling techniques and practices (PNA, CPM, BC andLOB)			1						1
						Measure and control performance against plan of construction projects (in terms of time, quantity, resource and cash flow)					1				1
						Able to prepare work breakdown structures,						1			1
						Able to estimate activity durations Command suitable software for construction projects based on their nature and complexity and Able to prepare cash flow forecast, material, machinery and manpower schedules.				1					1
						Generate resource requirement for activities at any given time periods.						1			1
	6 Construction Performance & Resource Optimization	Define Construction performance management, Identify the performance indicators in managing performance of construction projects. Explain the basic measuring criteria of individual construction performance indicator	3	3/20 = 0.15	0.15*34.5 = 5	Define Construction performance management, Identify the performance indicators in managing performance of construction projects. and Explain the basic measuring criteria's of individual construction performance indicator factors.		1							1
						Prepare construction performance measurement indicators plan and Able to measure and evaluate performance of construction Projects and Able to forecast						1			1

Test Blueprint (Table Specification) for BSC in Construction Technology and Management	
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Test Blueprint (Table Specification) for BSC in Construction Technology and Management

Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
Theme Four Share = 13.7 items from the total	1. Health and Safety Management in Construction	The course will give a clear picture to students about the general concepts of health and safety management in a construction site and will introduce the moral and legal responsibilities of the working environment, project site layout management about OSH; and awareness of health hazards associated with different construction materials during construction. The course also will enable students to apply the concepts on Human Concerns; Costs of SH and SH Benefits; Record; Record Keeping. & OSH Management Program: Planning, Implementation, and monitoring process.	3	3/8 = 0.375	0.375*13.7=5	To enable student to appreciate the importance of health and safety management in a construction site.		1							1
						To make student aware of legal requirements regarding health and safety.		2							2
						To make student aware of health hazards associated with different construction materials during construction.		1							1
						To enable him/her to work out suitable safety measures.			1						1
	2Construction Procurement and Contract Management	Enable learners to Know and able to successfully manage Construction Procurement & Contract Processes,	3	3/8 = 0.375	0.375*13.7=5	Enable learners to recognize Construction Procurement & contract Management course is a major course for the Competence of Construction Management		1							1
						- Enable learners to acknowledge the Learning Outcome of Construction Procurement& Contract Management		1							1

Test Blueprint (Table Specification) for BSC in Construction Technology and Management

Test Blueprint (Table Specification) for BSC in Construction Technology and Management															
Themes	Course Name	Objective	Credit hour	Weight of course or proportion	Number of test items from each course	Learning outcomes	Cognitive						Affective	Psychomotor	Total
							Remember	Understand	Apply	Analyze	Evaluate	Create			
		Methods, Concepts, Types and Governance Frameworks.				Course: Know and able to successfully manage									
		Enable learners to know the benefits and requirements of Procurement & Contract management applicable to the				Construction Procurement & Contract Processes, Methods, Concepts, Types and Governance Frameworks		1						1	
		Construction Industry (CI).				Enable learners to know the benefits and requirements of Procurement & Contract management applicable to the Construction Industry (CI)		1						1	
		Enable Learners to know the different competences of Construction Procurement & Contract Management				Enable Learners to know the different competences of Construction Procurement & Contract Management; namely:Construction Procurement & ContractManagement Necessities, Benefits andDefinitions of CI Project Delivery Systems, Construction Procurement and ContractManagement Governance Frameworks, Construction Procurement and Contract Management Processes. Construction Procurement and ContractManagement Methods and / or Types and assess the contextual reality of FDRE with respect to Construction Procurement & Contract Management and critically adapt new knowledge to fill the gap.				1				1	

[illegible][illegible]

10. Learning outcomes in terms of the three domains(Cognitive, Affective, Psychomotor

11. Conclusion

Exit examination can have a vital role in producing knowledgeable, skillful and attitudinally matured graduates. It contributes to prepare competent graduates as it can serve as a quality check for effectiveness. It also helps in improving academic programs quality and effectiveness. Furthermore, it can create the platform for cooperation among academic programs at different universities to work jointly to improve the programs quality.

In view of this, this document is produced to assist the setting of the exit examinations for all programs, which is being delivered by Ministry of Education. To meet the graduation profile, competency and learning outcome, exit exam competency selection and

identifying core course was done for 2015 EC graduating students. As a result, preparing test blueprint is necessary to prepare fairly distributed items based on the above criteria.