



## **Identified Competency Focus Areas and Selected Courses for National Exit Examination:**

**Program: - Bachelor of Science in Natural Resources Management**

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Courses and Competencies Identified for Exit Exam 2015 (First Draft)

# **1. Introduction**

## **1.1 Background**

In most developing countries like Ethiopia, where the population lives in rural and largely dependent on natural resources for subsistence, the role and significance of natural resources in economic development and societal wellbeing is recognized. Today the natural resources bases of the country are heavily suffering from widespread improper and unwise utilization resulting in their rapid degradation. Deforestation, desertification, loss of biodiversity, soil erosion, the decline of soil fertility decline, soil acidification, salinization, environmental pollution, and climate change are some of the major expressions of natural resources problems in contemporary Ethiopia. As more users place demands on the scarce environmental resources, the need for intelligent conservation and rational management is ever greater, the very concept of sustainable development. The program provides an opportunity for students interested in managing society's impacts on the natural resources and how to manage it for long-lasting benefit.

The host ministry of education prepared this draft document in order to produce a national competency framework and course selection for a program on natural resources management. The natural resources management curriculum aims to implement such a strategy by providing optimal solution relevant supportive, fundamental skills on practical and management supporting tools and diverse scientific disciplines focusing on most natural resources, and by showing the interaction among them and with their stakeholders that use and manage them.

Graduates of natural resource management programs are intended to fill any management gaps in issues relating to natural resources. After graduation, the graduates should be capable in skills and knowledge in the area of natural resources. In order to assess the graduates' competence, it needs to evaluate the graduates by providing an exit exam on the core courses delivered under the program of natural resources. To undertake the examination, the nationally harmonized curriculum will be used. Since, it is impractical to take all the courses; it has been used selected core courses by categorizing in to sub themes. The courses were organized and categorized in well-taught theme that packages interrelated courses together to deliver focused and comprehensive knowledge and skills to students on the major focus of the program. In the

natural resources management program, the major courses are categorized into five sub themes. From this sub theme 15 courses were selected to be considered in the exit examination.

## **1.2 Objectives of the Exit Examination**

The Natural Resource Management exit exam shall have the following objectives

- To produce skilled and competent manpower to national and international market
- Assessing students' educational achievement in major areas of Natural Resource Management (NaRM)
- Ensuring whether the graduation profile of NaRM curriculum have achieved at least common standards of knowledge and practical skills
- Improving public trust and confidence in public administration activities of professionals
- Facilitating the efforts of students to revise the core learning outcomes of the courses covered by the exit examination
- Ensuring all graduates from Higher Education Institutes satisfy the requirements of the labor market and employability through the national wide implementation of competency-based exit exam
- Creating competitive spirit among NaRM departments in Ethiopia with the vies to encouraging them to give due attention to the national standards

## **1.3 Significance of the Exit Exam**

It is important to set competency areas of the subject matter (program) in order to measure the how much graduates are acquired with skills, knowledge and attitudes. The following shows us the significance or setting competencies and identifying core courses of the program;

- To set competencies that helps to assess the basic skills, knowledge and attitude of graduating students;
- To systematically identify the courses which will be included the exit exam.

## **1. Expected graduate profiles**

The graduates of the NRM program at their graduation will be:

- Using their broad base knowledge in Natural Resources Management (NaRM), coordinate and implement integrated NaRM projects & programs particularly at the watershed level and also mediate cross-sectoral development initiatives,
- Identify Natural Resources and environmental-related problems, and design cost-effective, socially acceptable, and environmentally sound projects and programs for mitigation and adaptation.
- Develop, restore and manage various resources such as forests, soil, water, and wildlife particularly in an integrated manner, using watershed as a management unit, and introduce also various natural resources management strategies that can optimize the economic benefits from natural resources management interventions.
- Carry out watershed management planning using various methods
- Provide consultancy and advisory services to local communities, investors, and development actors working in the areas of Integrated NaRM
- Carry out small to medium scale NaRM-related research to provide solutions to locally emerging problems.
- Reinforce the reality that maintains and sustains natural resources, and ensures environmental quality.
- Think critically, communicate, cooperate and solve problems from an interdisciplinary perspective.

## **2. Competencies and learning outcomes**

### **3.1 Graduate competencies**

Graduates of NaRM are well equipped with theoretical knowledge and practical skills and attitude in various aspects of natural resources management which are needed to:

## **Knowledge**

- Understand the basic concepts, principles, applications in managing natural resources management such as: soil, water, forest, wildlife and environment along with ecological, social processes and systems.
- Understand the distribution of natural resources and the opportunities they offer for socio-economic developments and environmental integrity
- Know and understanding problems with the ecosystem, challenges and mitigation measures and demonstrate the soil and water management
- Understand the basic principle, approach of sustainable management of those soil, water, forest, wildlife and environment.

## **Skills**

- Analyze problems encountering the natural resources on scientific basis, and provide integrated and environmentally sound solutions by considering policies and legislations
- Competent in the principle, techniques, and distribution of natural resources and the opportunities they offer for socio-economic developments and environmental integrity
- Analyze problems encountering the natural resources, design integrated and environmentally sound solutions by considering policies and legislations, and by coordinating and reconciling the varied interests of different parties through analysis, identification, and participation of stakeholders,
- Design and implement problem-orientated research and development projects, provide advice for policy makers, teach courses and offer various training programs in Natural Resource Management areas and provide consultancy.
- Apply modern tools and techniques in management of natural resources and environmental protections, work for continuous refinement and upgrading of existing practices, and become competent green entrepreneurs in their fields of experts, and
- Do feasibility studies, plan, implement, monitor, and evaluate programs/projects related to natural resources management on a sustainable basis,

## **Attitudes**

- Capable to work in a multi-disciplinary team to solve natural resource management related problems; facilitate community based natural resources management work and conflict management
- Demonstrate the green entrepreneur in urban greening, work employment, nursery establishment and development projects in natural resources management such as: restoration and rehabilitation of degraded land, soil and water conservation practice, watershed management projects.

### **3.2 Learning Outcomes**

- Sustainable management of the natural resources insured through the provision of outstanding and contemporary education and research in natural resources management,
- Contribution of natural resources in economic development and improving living standards of rural community at large,
- New technologies, techniques, and approaches for sustaining the management and utilization of natural resources in Ethiopia developed and extended,
- Awareness about conservation of natural resources and challenges and policies, legislation, and strategies about natural resources discussed and advocated

### **3. Courses to be included in the exam**

We use some criteria in selecting courses to be considered for the exit exam.

Selection criteria that we use are as follows:

- First we list down all the courses under the department of NaRM
- Based on the subthemes we categorize all courses in to five sub themes
- Prioritize the courses in each categories
- Condense the courses which are supportive in nature
- Give weights for each theme.

The following are selected courses based on some criteria:

#### **4. Categorizing courses in to themes**

Number of thematic area and courses to be included in the exit exam:

- Number of thematic area: 6
- Courses to be included in the exit exam: 15

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Table 1. Categories of thematic areas and courses

<b>Theme 1: Soil Resources and Land Management</b>	<b>Theme 2: Water Resources Management</b>	<b>Theme 3: Forest Resources Management</b>	<b>Theme 4: Wildlife and Biodiversity Resources Management</b>	<b>Theme 5: Environment &amp; Climate change</b>	<b>Theme 6: Tools &amp; Social aspects in Natural Resources</b>
Integrated Soil Fertility Management Cr.Hr 3	Water Resources Planning, Development and Management Cr.Hr 3	Nursery Establishment & Plantation Management Cr.Hr 3	Wildlife Ecology and Management Cr.Hr 2	Climate Change Adaptation and Mitigation Cr.Hr 2	Natural Resources Policy and Law Cr.Hr 2
Soil and Water Management Cr.Hr 3	Limnology and Wetland Management Cr.Hr 2	Sustainable Forest Management Cr.Hr 3	Biodiversity Conservation and Management Cr.Hr 3	Energy and Environment Cr.Hr 3	Environmental and Social Impact Assessment Cr.Hr 3
Integrated Watershed Management Cr.Hr 3		Agro -forestry Systems and Practices Cr.Hr 3			
Land Evaluation and Land Use Planning Cr.Hr 3					

## **5. Conclusion**

In general, students that have been certified as competent graduates capable of working successfully in a variety of Natural Resources Management fields and have met the requirements for a BSc degree in natural resources management. It is believed that students graduating with this program can analyze and document the natural resources at various levels; develop and lead projects that focus on conservation of natural resources, initiate, organize, implement training on sustainable management of natural resources, provide advice and technical support for small scale natural resources-based industries. To realize these competencies of graduate profiles, it is required to undertake the competency exit examination of the program.

The competency courses' topics are identified in the initial draft of this exit exam using a set of criteria and a time limit. This was done using the BSc curriculum for natural resources management that has been nationally harmonized. The list of courses will be updated depending on updated if the national curriculum modified. The competency questions should concentrate on the knowledge for each important subject.

Courses and Competencies Identified for Exit Exam 2015 (First Draft)

**Competency and Core Course Identification Validation Workshop for  
National Exit Examination**

**Participants' List**

**Band:-** Band Four

**Program:-** Natural Resources Management

R.No.	Name of the Participant	University	Position	Role in the Workshop	Signature
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5	Mr. Tamrat Kassa	Harumaya University	Lecturer	Participant	
6	Mr. Demeke Asmamaw	Debre Markos University	Assistance Professor	Participant	
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