## Ministry of Education Ethiopia

**Ministry of Education**

**Identified Competency Focus Areas and Core Courses for Ethiopian Higher Education Institutions’ Exit Examination**

Program: - **Bachelor of Education (B.Ed.) in Biology**

**By:- YadessaGonfa (PhD): Department of Biology, Hawassa University**

**GirmaMoti (PhD Candidate), College of Education, School of Teacher Education, Hawassa University**

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# INTRODUCTION

The graduates of Bachelor of Education in Biology are professionally and technically trained with an assumption to produce effective biology teachers during the graduates’ stay in their respective University. Once properly trained, the graduates will have developed core and specific professional competencies (knowledge, skills and attitudes) required to stand confidently as biology teachers. Although teachers are the fore frontier working forces in assuring quality of education, multiple potential factors contribute for the worsening quality of education. Of the influential dynamics, inadequate teacher training system stakes the biggest part of the challenges. It is obviously known that the graduates are expected to properly attending the teaching and learning process, professional practices and reflections and training in their home university and in the nearby secondary schools. Therefore, attesting the minimum leaning competencies of candidate teachers’ usually develop through pre-service teacher training practices at their home university. Thus, giving exit examination of competency testing is expected to be appropriate enough to address the demands of the workplace or the schools.

Professionally, teaching is both a science and an art where teachers are crafted from various knowledge bases; among which the what (subject matter-content mastery; biological knowledge), the why (attitudes towards the importance of biological education) and the how of the contents (pedagogical skills) are very important scenarios. Thus, a combined curriculum that aims to address these components is worth mentioning in an Ethiopian context where the quality of teaching and learning is deteriorated at the base of educational arena. The whole idea of this curriculum is therefore to help universities train qualified biology teachers who professionally workout for the improvement of students’ learning engagements and outcomes.

Currently, in order to test the professional competencies’ graduates have developed during their stay in their particular university; an exit exam is required to be given nationally on some programs at the end of 4th year staring from 2015 E.C/2023. As consequence, the Bachelor of Education in Biology is one of the selected programs to give exit examination of competency testing on biology major and pedagogical focus areas on the bases of guidelines given by Ministry of Education. .

# EXPECTED PROFILES OF GRADUATES

After completing B.Ed degree in biology, the graduate is expected to:

* + Prepare instructional plans of teaching biology properly.
  + Develop instructional materials that foster students’ critical thinking.
  + Teach secondary school biology effectively in the classrooms.
  + Conduct research in biological education and related fields.
  + Operate basic biological equipment.
  + Systematically collect and identify biological materials.
  + Engage students in knowledge construction activities.

# MINIMUM LEARNING COMPETENCIES

The graduates are expected to develop the following minimum learning professional competencies. These are:

* Prepare lesson plan and use it in secondary biology classrooms
* Demonstrate professional competencies (knowledge, skills and attitudes) required to teach biology in the classrooms
* Appreciate application of different active learning methods in biology secondary classrooms
* Assess students’ learning performance in biology secondary classrooms.
* Develop the skills of operating and using biological equipments.
* Solve classroom practical problems in biology instruction through action researches

# FOCUS AREAS OF EXIT EXAMINATION

The focus areas of competency testing exit examination are based on the total credit allocation to major biology courses and major education or pedagogical courses expected to develop professional competencies of biology candidate teachers. Accordingly, 60% and 40% of exit examination of competency testingwill be prepared from major biology courses and major education or pedagogical courses respectively as shown in table 1 and 2 below.

## Table 1:Courses selected for the exit exam and exam coverage in percentage

|  |  |  |
| --- | --- | --- |
| **No** | **Title of the course** | **Exam coverage (%)** |
| 1 | Cell Biology and Microbiology | 10 |
| 2 | Cryptogamic&Phanerogamic Botany | 9 |
| 3 | Plant Physiology | 6 |
| 4 | Invertebrate &Vertebrate Zoology | 12 |
| 5 | Mammalian Anatomy and Physiology | 5 |
| 6 | Principles Genetics | 5 |
| 7 | Evolution | 4 |
| 8 | Principles of Ecology | 3 |
| 9 | Parasitology and Immunology | 6 |
| 10 | Foundation of Education | 6 |
| 11 | Curriculum Studies | 6 |
| 12 | General Methods of Teaching | 4 |
| 13 | Teaching in Multicultural Setting | 4 |
| 14 | Instructional Design and Technology | 4 |
| 15 | Teachers as Reflective Practitioners and action research | 6 |
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## Table 2: Courses categorized into themes

|  |  |  |
| --- | --- | --- |
| **No** | **Theme** | **Course Title** |
| 1 | Cellular & Microbial Biology | Cell Biology and Microbiology |
| 2 | Botanical Sciences | Cryptogamic&Phanerogamic Botany |
| Plant Physiology |
| 3 | Zoological Sciences and Fisheries | Invertebrate & Vertebrate Zoology |
| Mammalian Anatomy and Physiology |
| 4 | Genetics & Evolutionary Biology | PrinciplesofGenetics |
| Evolution |
| 5 | Ecological and Environmental Biology | Principles of Ecology |
| 6 | Biomedical Science | Parasitology and Immunology |
| 7 | General Education and Learning | Foundation of Education |
| Curriculum Studies |
| General Methods of Teaching |
| Teaching in Multicultural Setting |
| Instructional Design and Technology |
| 8 | Pedagogical Content Knowledge and Reflective Practices and action researches | Teachers as Reflective Practitioners and action research |
| Subject Area Method I&II |

# 5.CONCLUSION

The national exit exam of candidate teachers’ competencies (KNA) of gradates of bachelor of education in biology before employment to attest quality of graduates. Accordingly, 16 courses (9 major and 7 pedagogical courses) were identified for graduates of Bachelor of Education (B.Ed) in biology. Likewise, expected profiles of graduates, minimum learning competencies and learning outcomes areset for understanding the contexts of graduates. Therefore, the exit examination of knowledge, skills and attitudes of graduates of Bachelor of Education in biology will be prepared from the focus areas of major and education courses assigned in tables 1 and 2 above. The exit Exam of competency testing exam questions will be prepared according to the percentage proportions given to each courses. Likewise, the graduates will prepare themselves and take the exit examination of professional competencies.