



Identified Competency Focus Areas and Core Course for National Exit Examinations

Program: Bachelor of Science [BSc] in Physiotherapy

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December, 2022

Addis Ababa

Ethiopia

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1. Introduction

Physiotherapists assess, plan and implement rehabilitative programmes that improve or restore human motor functions, maximize movement ability, relieve pain syndromes, and treat or prevent physical challenges associated with injuries, diseases and other impairments. They apply a broad range of physical therapies and techniques such as movement, ultrasound, heating, laser and other techniques. It is also concerned with identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation. This encompasses physical, psychological, emotional, and social wellbeing (World Physiotherapy, 2001, ESCO, 2016).

The physiotherapy curriculum is a competency-based curriculum building on the strengths of the traditional curriculum and incorporating innovative and transformative features highlighted in the SPICES model (student-centered, problem-based, integration, community-based, systematic) and other global recommendations on curriculum and pedagogical design.

An exit exam is a test that is typically given to students towards the end of their higher education which is used to measure/assess the knowledge, attitude and skill of students received at a learning institution in general, rather than assessing gained from specific courses. As such, all the knowledge, attitude, and skill needed to answer a given question is contained within the question itself.

An exit exam refers to a specific form of assessment many higher education institutions utilize to examine the basic level of education obtained by its students. Also known as an end of course test, an exit exam may help a college or university make pertinent decisions to improve the quality of institution-wide education and, in some cases, can help assess the standard of education in specific courses or departments. In many instances, students are required to pass these exit exams in order to fulfill the requirements necessary to graduate.

2. Objectives of Exit examination

The main objectives of exit examination are as follows:

- To ensure students' achievement and improve the quality of education.
- To improve the relevance of academic programs and institutional performance.
- To assess whether higher education graduates attain the graduate profile or not
- To produce skilled and competent manpower for local, national, and international markets.
- To ensure that graduates achieve the required learning outcomes and hence meet the graduate profile of the curriculum.
- To provide a platform as a quality monitoring tool in the form of certification of competence for employment.

3. Significance of the document

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

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

4. Expected graduates profile

A graduate's profile is the general description of the desirable qualities of graduates in real-world work. Graduates' profile helps to determine the students' conceptual knowledge, skills, and attitude that they possess. The following are among the BSc physiotherapy graduate profiles students are expected to:

1. Have the knowledge of human anatomy and physiology, kinematics, function and interaction of cellular components in metabolism and disorders associated with the human body in the care of patients with diverse difficulties requiring physiotherapy.

2. Perform physiotherapy related community diagnosis and provide community based rehabilitation by incorporating physical activity, functional rehabilitation and education programs for children, adults and older people with disabilities.
2. Provide and be able to perform physiotherapeutic assessment, diagnosis, treatment and rehabilitation of patients with cardiac and respiratory conditions in all ages.
3. Perform comprehensive professional clinical reasoning and physiotherapeutic clinical skills to the assessment, diagnosis, management and follow-up of all kinds of patients/clients which need physiotherapy help
4. Have the knowledge, attitude and practice of preventive gerontology, geriatric rehabilitation, select the appropriate treatment modalities, and prescribe specific exercises for aged patients/clients.
5. Have a broad in-depth knowledge and understanding of Neuro-musculoskeletal anatomy and skill of basic anatomy to systematically locate human structure.
6. Apply professional clinical reasoning and physiotherapeutic clinical skills to the assessment, diagnosis and management of patients/clients with musculoskeletal disorders.
7. Perform examination, diagnosing and managing of sports injuries.
8. Perform physiotherapeutic assessment, treatment and rehabilitation for patients/clients with neurological problems.
9. Perform proper physiotherapeutic assessment, treatment and rehabilitation for patients/clients with gynecological and obstetrics conditions.
10. Perform physiotherapeutic assessment, treatment and rehabilitation of pediatric conditions.
11. Perform physiotherapeutic assessment, treatment and rehabilitation in cardiopulmonary conditions.
12. Perform assessments and apply therapeutic exercises and different electro-physical modalities such as manipulation (soft tissue and joint mobilization), electrotherapy and Cryotherapy for patients/clients.
13. Perform as a team leader or member in injury and disability prevention and management
14. Conduct research to contribute for the further development of physiotherapy and rehabilitation of common community problems within the country.

15. The skill to manage rehabilitation service projects by designing public health strategies, advocating, supervising, leading, managing, teaching and developing and implementing health policy locally, nationally and internationally.
16. The graduates will be able to work in different organizations where health promotion, prevention, treatment and rehabilitation are provided for individuals/communities. These organizations could be;
 - A. Community based rehabilitation programs.
 - B. Community settings including primary health care centers, individual homes, and field settings.
 - C. Education and research centers, Hospitals, Occupational health centers, Out-patient clinics, Physiotherapist private offices, practices, clinics, Rehabilitation centers and residential homes, Schools, including pre-schools and special schools.
 - D. Sports centers/clubs.

5. Competencies and learning outcomes

5.1. Competencies

The BSc graduates must have the required knowledge, skill and attitude to assess and manage patients independently who demand physiotherapy service. Currently, the competency of students will be measured by national exit examination at the end of completion of physiotherapy courses with a great emphasis on students' knowledge, skill, and attitude.

The details of the competency are presented here below by categorizing knowledge, skills, and attitudes.

Table 1: Competencies of BSc physiotherapy students

Areas of competency	Expected Competencies to be achieved
Knowledge	<ul style="list-style-type: none"> ● Graduates will able to ● Identify and interpret patient problems after subjective and objective examination. ● Understand basic principles of subjective and objective assessment ● Know normal human anatomy and physiology ● Identify and understand anatomical and physiological pathologies ● Analyze information to make and justify accurate clinical decisions. ● Understand the desired outcomes and personal goals of the patient. ● Establish a list of the patient’s problems and prioritize based on the ICF model. ● Explain the assessment findings to the patient/carers/family members. ● Explain SMART goals with the patient/carer/family members (short and long term goals). ● Plan appropriate treatment interventions, designed to meet the patient’s goals. ● Identify treatment interventions relative to each agreed goal based on available evidence including education and prevention strategies in the plan. ● Plan patient referral or discharge. ● Able to know how to give advice and a self-management/prevention plan to the patient if appropriate. ● Understand and explain leadership and management in their health system ● Know, understand and comply with laws, policies and requirements as established by the government or employer or professional organization
Attitude	<ul style="list-style-type: none"> ● Respect the confidentiality, dignity, privacy and human rights of the clients/others. ● Comply with ethical and professional codes and legislation. ● Ensure patient, caregivers and colleague safety at all times. ● Understand and respect the roles and responsibilities of other healthcare professionals. ● Take opportunities to teach patients, carers, colleagues and students. ● Being Compassionate, Respectful and Caring
Skill	<ul style="list-style-type: none"> ● Good verbal and non-verbal communication with the patient, caregiver, colleagues and managers. ● Conduct a holistic physiotherapy assessment of the patient. ● Modify the assessment process throughout to match the individual and his/her response ● Plan appropriate intervention plans and subsequent sessions according to best outcomes, within practical limits. ● Deliver physiotherapy interventions safely and effectively ● Monitor effects of intervention on the signs, symptoms and problems. ● Modify intervention, where appropriate, to ensure best possible outcomes.

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| <ul style="list-style-type: none"> ● Take an active, functional, progressive rehabilitation and exercise-based approach to physiotherapy interventions. ● Select and use valid and reliable outcome measures. ● Assess, diagnose, plan and implement community based rehabilitation. ● Implement health promotion and prevention programs adapted to the needs of the community. ● Participate as effective, collaborative multi-disciplinary team members ● Use resources appropriately where they are necessary to deliver safe and effective care ● Prescribe appropriate assistive devices/technology and instructs the patient in their safe use` ● Fully document the assessments, treatment outcomes, and any advice/self-management plan and equipment/device prescription in the patient medical record. ● Make suitable arrangements for referral to another professional/organization where it is necessary |
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5.2. Learning outcomes

After completing those courses presented on the mentioned themes, graduating students will be able to:

- Explain concepts of professionalism and ethical practice in terms of professional, ethical standards and competencies.
- Explain key principles involved in the protection and provide community rehabilitation of vulnerable people.
- Demonstrate effective verbal, non-verbal, written and electronic communication including conflict resolution.
- Explain principles of patient assessment and treatment in physiotherapy
- Describe concepts, terminologies & principles of human anatomy, physiology, human pathology and biochemistry.
- Explain essential biomechanical principles including axes, planes, joint movement and balance.
- Explain and demonstrate principles of effective observation and measurement of posture, limb length, joint range, muscle length, walking speed.
- Demonstrate respectful palpation of anatomical structures with accurate verbal explanation.
- Explain and demonstrate motor development, motor control and learning techniques.
- Explain and use the concept of evidence-based practice.

- Explain exercise physiology and apply it to exercise prescription and progression.
- Explain the theoretical background, indications, cautions and contraindications for physiotherapy interventions.
- Apply safe and effective modalities including manual therapies, electrotherapeutic agents and exercise therapy.
- Explain common trauma mechanisms, conservative and non-conservative management strategies (indications, types, risks, and complications).
- Prescribe and measure assistive devices and teach the patient how to use them safely.
- Explain the indications, techniques of amputation, and plan physiotherapy interventions for a patient who has undergone limb amputation.
- Discuss the applied anatomy and pathophysiology of the central and peripheral nervous systems.
- Discuss the role of physiotherapy in the management of people with acute, degenerative and infective conditions of the nervous system.
- Analyze the functional limitations resulting from acute, degenerative and infective conditions of the nervous system using the ICF.
- Plan and implement intervention programmes to optimize function, independence and social participation in individuals with acute, degenerative and infective conditions of the nervous system.
- Perform assessment, clinical reasoning, safe and effective prevention of disability and physiotherapy interventions with older people.
- Apply assessment, clinical reasoning, safe and effective prevention of disability and physiotherapy interventions with people with cancer.
- Plan and implement intervention programmes to optimize function, independence and social participation in individuals with acute and degenerative conditions and diseases which affect the extremities and pelvic girdle.
- Demonstrate assessment, clinical reasoning and safe and effective interventions for sports injuries.
- Critically discuss the role of physiotherapy in the management of people with acute and degenerative conditions and diseases which affect the spine, head and face.

- Plan and implement intervention programmes for individuals with acute and degenerative conditions and diseases which affect the spine, head and face.
- Plan and implement intervention programmes to women with urogynaecological conditions, and in the pre and post-natal period
- Explain the pathophysiology of common respiratory and cardiac conditions
- Perform safe and effective physiotherapy assessment and treatment for pediatrics conditions.

6. Categorizing courses in to themes

The National Exit Examination in physiotherapy program for undergraduate students' competency has six themes. These are basics of physiotherapy; musculoskeletal physiotherapy, orthopedics and trauma in physiotherapy, pediatrics physiotherapy, neurological physiotherapy, and cardiopulmonary physiotherapy. Under the basics of physiotherapy theme, five courses would be considered. Three courses are categorized under musculoskeletal themes. In addition, orthopedics and trauma in physiotherapy theme includes two courses. Accordingly, for exit exams documentation the themes in physiotherapy program can be generalized by the table 2 here below.

Table 2: list of thematic areas in physiotherapy program

S.No.	List of themes in physiotherapy program	Credit hour	Share in %
1	Basics of physiotherapy	29	34.12
2	Musculoskeletal physiotherapy	22	25.88
3	Pediatrics physiotherapy	11	12.94
4	Orthopedics and trauma in physiotherapy	7	8.24
5	Neurologic physiotherapy	10	11.77
6	Cardiopulmonary physiotherapy	6	7.05
Total		85	100

7. Selected courses to be included in the exam

This exit exam document compiled with 6 themes and 13 modules/courses for achieving the competencies level of graduates that are expected to acquire. According to the direction

suggested by the head of quality and competency improvement desk (at MoE), In the bachelor of science in physiotherapy program there are plenty of courses taken in higher institute education duration but the core courses are clearly presented and have been selected in this document. Accordingly, this exit examination document has identified 13 modules/courses delivered at different semesters and academic calendars.

Table 3: Selected courses to be included in the exit exam.

S. No	List of themes	List of module	Module code	Cr.h (ECTs)
1	Basics of physiotherapy	Introduction to physiotherapy	PhysM2101	2(4)
		Fundamentals of Physiotherapy	PhysM2202	8(13)
		Scientific foundation of physiotherapy I	BioMM2102	13(21)
		Disability, Inclusion and Community Rehabilitation	PhysM2204	1(2)
		Scientific foundation of physiotherapy II	PhysM2201	5(9)
2	Musculoskeletal physiotherapy	Musculoskeletal Physiotherapy I	PhysM3102	8(14)
		Musculoskeletal Physiotherapy II	physM3201	10(17)
		Kinesiology	physM2103	4(6)
3	Pediatrics physiotherapy	Pediatric Rehabilitation	PhysM-4104	11(18)
4	Orthopedics and trauma physiotherapy	Physiotherapy in Trauma and Orthopedics	PhysM2202	5 (8)
		Advanced physiotherapy care	PhysiM4101	2(4)
5	Neurologic physiotherapy	Neurological Rehabilitation	PhysM3101	10(16)
6	Cardiopulmonary physiotherapy	Cardiopulmonary Rehabilitation	PhysM3202	6(10)
Total		13 Modules/courses		85 cr. Hr

8. Conclusion

Generally, the basic aim of the national exit examination is to produce high-level and qualified professionals in physiotherapy that will benefit patients who need physiotherapy service. The national exit examination offers a comprehensive basis for graduates' careers and further education in physiotherapy on the identified course lists and themes. Graduates in physiotherapy will be equipped with solid knowledge, skill, and attitude on subjective and objective assessment, performing physical therapy treatment, explaining risk factors, and pathophysiology of disorders requiring physiotherapy services. Having a competent base exit examination guide in a physiotherapy program enables graduates to assess and treat disorders/disease that affect people of all ages'.

So, to measure the competency of graduates we include 13 modules among 39 modules covered in their four year stay of higher education. It should be recognized that it doesn't mean others are not important as every module has their own input to capacitate physiotherapy graduates in different areas. But at least every graduate is expected to be competent in the selected module for the exit exam.

Finally, the academia, students, and concerned higher officials are expected to be responsible for the successfulness of the National Exit Examination to have competent physiotherapy professionals.

9. References

1. Eusco , physiotherapy definition, 2020, <http://data.europa.eu/esco/isco/C2264>
2. Modularized Harmonized National BSc in Physiotherapy Curriculum, June, 2022
3. World Physiotherapy, 2001

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