



Professional Board for Physiotherapy, Podiatry and Biokinetics

Minimum standards for training: PHYSIOTHERAPY

1. Rationale for the Profession

Physiotherapy is a healthcare profession that provides services to individuals and communities/ populations to develop, maintain and restore maximum movement and function, throughout the lifespan. Physiotherapy is provided for individuals who have, or may develop impairments, activity limitations, and participation restrictions, related to conditions of the neuromusculoskeletal, neurological, cardiovascular, pulmonary, and/or integumentary systems as they relate to human movement, or due to personal and environmental factors. Physiotherapy is concerned with identifying and maximising quality of life and movement potential within all the pillars of health care, namely promotion, prevention, treatment/ intervention, habilitation / rehabilitation and referral¹. Knowledge and application of the science of human movement is central to the profession of Physiotherapy.

2. Purpose of training

The undergraduate programme must equip physiotherapists with the basic knowledge, skills and attitudes to enable them to function as reflective practitioners within the philosophy and values inherent to the physiotherapy profession within the South African healthcare context, taking into consideration the national and global burden of disease. The training aims to deliver professionals, who understand patient-centred care, have excellent communication and collaborative skills and high standards of ethical and professional behaviour, and have the ability to conduct research and apply evidence-based practice.

The undergraduate programme trains physiotherapists to meet the minimum standards required for registration with the Board for Physiotherapy, Podiatry and Biokinetics of the Health Professions Council of South Africa.

¹ World Confederation for Physical Therapy. Policy statement: Regulation of the physical therapy profession. London, UK: WCPT; 2017. www.wcpt.org/policy/ps-regulation

3. General

3.1. Minimum requirements for access to training

National Senior Certificate with university admission endorsed by Umalusi (Quality Assurance Council), or an equivalent qualification. In addition, the accredited tertiary institutions may have specific entry requirements for their Physiotherapy programme.

The following subjects are highly recommended:

- Mathematics
- Physical Science
- Life Sciences / Biology

3.2. Length of the program

The program is a four-year Professional Bachelor degree with students exiting at HEQF level 8 (http://www.saqa.org.za/docs/misc/2012/level_descriptors.pdf). It is preferred that the program is situated in a Medical or Health Sciences Faculty to ensure outcomes related to inter-professional health education are met.

A graduate is entitled to apply for Post-Graduate Diploma, Master and PhD degree programs providing he/she meets the specific institutional entry requirements.

3.3. Mode of delivery

The four-year full-time program has theoretical, practical, clinical and workplace-based components. A variety of learning and teaching methods may be utilised, including face-to-face or classroom-based, blended- and online learning methodologies. Problem-based, enquiry-based learning and similar methods are encouraged. Group work and inter-professional training are also part of the course. Incorporating technology to increase access, optimise teaching and learning and improve service delivery is also recommended.

3.4. Registration with the HPCSA

All undergraduate and postgraduate students must register as students with the HPCSA for the full duration of the program, from year one until they exit the program. After completion of Community Service, graduates are eligible to register with the HPCSA as independent practitioners.

4. Broad outcomes for the program

The successful Physiotherapy graduate must:

- 4.1.** Be ethically accountable to the profession, client and community
- 4.2.** Be able to execute safe, effective and professional practice

- 4.2.1. Demonstrate knowledge of the normal and abnormal functioning of the human body and psyche.
 - 4.2.2. Perform a physiotherapy evaluation of the client(s)'s physical, functional and psychological status, analyse his/her/their needs, formulate a hypothesis and predict prognosis.
 - 4.2.3. Identify risk, precautions and contraindications, and modify treatment plans accordingly.
 - 4.2.4. Develop and implement an evidence-based intervention plan.
 - 4.2.5. Evaluate the effectiveness of this intervention using appropriate outcome measures and incorporate the findings in future practice.
- 4.3. Be able to communicate appropriately and effectively with clients, family and other members of the healthcare team.
 - 4.4. Exhibit sensitivity towards the cultural environment on the outcomes of health care.
 - 4.5. Be able to plan, implement and evaluate appropriate, cost-effective physiotherapy services within the South African health context.
 - 4.6. Be able to identify, apply and/or develop appropriate technology to support physiotherapy practice.
 - 4.7. Be able to interpret and conduct supervised research in physiotherapy practice.
 - 4.8. Be able to advocate for patient/client groups with particular health needs (including the poor and marginalised members of society).

5. Program Fundamentals

The program must comply with the following Higher Education Qualifications Sub-Framework (HEQSF) minimum requirements for a professional degree in Health Sciences:

NQF Exit Level: 8

Minimum total credits: 480 (includes a minimum 30 credits for Research)

Minimum total credits at Level 8: 120

The PPB board strongly recommends programs do not exceed this by more than 5% (maximum 510 credits).

The table below defines content, exposures and/or activities with minimum credit load for each (1 credit = 10 notional hours). It also provides *guidance* concerning what the students' need to 'know' or 'know of' (knowledge) and what they need to be able to 'do' (practical or clinical skill(s)).

Please note that work integrated learning (WIL) should occur throughout the four years of the program (refer to the PPB guideline for WIL – [Addendum 1](#)).

It remains the prerogative of institutions to develop their curriculum to ensure graduates exit with the necessary knowledge, skills, attitudes and behaviours as outlined in the broad outcomes above (Section 4).

Content/ Exposure/ Activity	Knowledge level	Practical/ clinical skill(s) component	Minimum credits
5.1. Professional Behaviour & Practice Management			20
5.1.1 Professionalism	✓	✓	
5.1.2 Bioethics	✓		
5.1.3 Medical Law	✓		
5.1.4 Human rights	✓		
5.1.5 Cultural and socio-economic diversity	✓		
5.1.6 Healthcare systems	✓		
5.1.7 Health promotion & prevention	✓	✓	
5.1.8 Principles of rehabilitation	✓	✓	
5.1.9 Communication (includes effective interviewing, education, counselling)	✓	✓	
5.1.10 Documentation & report writing	✓	✓	
5.1.11 Practice management	✓	✓	
5.2. Research methods (including research ethics)			35
5.3. Body structure, organs & systems			80
5.3.1 Cellular & Molecular Biology	✓		
5.3.2 Histology	✓		
5.3.3 Chemistry (atomic structure and the nature of bonding in molecules, ionic substances and metals, electrochemistry, stoichiometry, gasses, chemistry of biomolecules, chemical kinetics, Krebs cycle)	✓		
5.3.4 Anatomy of the musculoskeletal-, cardio-vascular-, respiratory-, central and peripheral nervous systems, integumentary system, metabolism, endocrine- and immune systems	✓	✓	
5.3.5 Physiology of the muscle- neurological, respiratory, cardio-vascular, digestive, renal, endocrine, reproductive and immune systems	✓	✓	

Content/ Exposure/ Activity	Knowledge level	Practical/ clinical skill(s) component	Minimum credits
5.3.6 Applied physiology including pain and exercise	✓	✓	
5.3.7 Changes across the lifespan (from pre-birth to the older person)	✓	✓	
5.3.8 Behaviour and mental health	✓		
5.4 Biomechanics and human movement			80
5.4.1 Physics (e.g. splinting and mechanics, mechanical energy, work and power, momentum, temperature and thermal energy, waves and radiation, electro-stimulation)	✓	✓	
5.4.2 Normal development (motor control) and changes across the lifespan	✓		
5.4.3 Biomechanics	✓	✓	
5.4.4 Movement analysis	✓	✓	
5.5.5 Ergonomics	✓	✓	
5.5.6 Muscle testing & function	✓	✓	
5.5.7 Joint testing & function	✓	✓	
5.5.8 Neural testing & function	✓	✓	
5.5.9 Cognitive, emotional & behavioural influence on human movement	✓		
5.5.10 Anthropological and sociological perspectives on health/ movement	✓		
5.5 Pathology (aligned with local burden of disease)			40
5.5.1 Anatomical pathology (inflammation, healing and repair; disease on cellular level)	✓		
5.5.2 Non-communicable diseases (including obesity, diabetes, cardio-vascular disease, cancer)	✓		
5.5.3 Communicable diseases (including HIV/AIDS, TB)	✓		
5.5.4 Pain	✓		

Content/ Exposure/ Activity	Knowledge level	Practical/ clinical skill(s) component	Minimum credits
5.5.5 Risk factors for illness/movement disorders	✓		
5.5.6 Cognitive, emotional & behavioural functioning in illness and pain	✓		
5.5.7 Anthropological and sociological perspectives on illness	✓		
5.6 Pharmacology			5
5.7 Interpretation of special tests/ investigations			5
5.7.1 Imaging (e.g. X-rays, MRI, fMRI, PET scans, LODOX, ultrasound)	✓		
5.7.2 Pathology tests	✓		
5.7.3 Blood gasses	✓		
5.7.4 EMG	✓		
5.7.5 EEG	✓		
5.7.6 Movement -function tests (e.g. 3-D motion analysis)	✓		
5.7.7 Doppler (Ultrasound)	✓		
5.7.8 Nerve conduction tests	✓		
5.8 Communication			12
5.8.1 Effective interviewing, education, counselling within the bio-psychosocial model (including verbal & non-verbal skills in communicating information, advice, instruction and professional opinion to service users, colleagues and others)	✓	✓	
5.8.2 Additional (local) language (optional)			
5.9 Functional assessment of the movement system (includes cardio –respiratory systems)			10
5.9.1 Functional outcome measures	✓	✓	
5.9.2 Field tests	✓	✓	

Content/ Exposure/ Activity	Knowledge level	Practical/ clinical skill(s) component	Minimum credits
5.10 Manual techniques for assessment			20
5.10.1 Neuro-musculoskeletal assessment (including ROM & flexibility testing (e.g. goniometry, inclinometry, composite flexibility tests), strength, power, endurance (e.g. Oxford scale, dynamometry), neuro-dynamic testing (nerve conduction, sensation, proprioception] balance, and functional testing)	✓	✓	
5.10.2 Cardio-respiratory assessment (e.g. auscultation, chest expansion/ breathing pattern, peak expiratory flow)	✓	✓	
5.10.3 Cardio-vascular assessment (e.g. heart rate, blood pressure, peripheral pulses, perfusion, oedema)	✓	✓	
5.10.4 Neurological status (e.g. level of consciousness)	✓	✓	
5.10.5 Skin integrity (e.g. observation, palpation, wound/scar size measurement/ mapping)	✓	✓	
5.10.6 Fitness testing	✓	✓	
5.10.7 Pain	✓	✓	
5.10.8 'Special tests' / differential diagnostic tests of joint and soft tissue injuries	✓	✓	
5.10.9 Anthropometric measurements	✓	✓	
5.11 Clinical reasoning process			15
5.11.1 Hypothesis generation and review/modification	✓	✓	
5.11.2 Goal setting	✓	✓	
5.11.3 Identification of personal and professional limitations	✓	✓	
5.11.4 Referral	✓	✓	
5.12 Manual techniques for treatment			20
5.12.1 Neuro musculoskeletal techniques (e.g. facilitation [including proprioceptive and exteroceptive facilitation techniques], strength, power and endurance re-education and training, spinal and peripheral joint mobilisation, soft-tissue mobilisation, neural mobilisation)	✓	✓	

Content/ Exposure/ Activity	Knowledge level	Practical/ clinical skill(s) component	Minimum credits
5.12.2 Respiratory techniques for improving lung volume and function (e.g. postural drainage, chest manual techniques [percussion, shaking and vibration, exercise [including breathing exercises], nebulisation, suctioning)	✓	✓	
5.12.3 Cardio-vascular techniques (e.g. positioning for pressure care, exercise, electro-physical modalities, (thermal effects))	✓	✓	
5.12.4 Skin (e.g. scar and soft tissue mobilisation, electro-physical modalities (thermal and light therapy))	✓	✓	
5.13 Therapeutic exercise			20
5.13.1 Exercise for restoration / recovery	✓	✓	
5.13.2 Exercise for health promotion and prevention of injury and disease	✓	✓	
5.13.3 Behaviour change interventions	✓	✓	
5.14 Assistive and supportive devices			5
5.14.1 Mobility devices (e.g. wheelchairs, walking aides)	✓	✓	
5.14.2 Braces and splinting (e.g. back-slab, corsets, neck collars, knee- , ankle, foot- and elbow braces/splints)	✓	✓	
5.14.3 Bandaging and strapping	✓	✓	
5.14.4 Pressure garments	✓	✓	
5.14.5 Slings	✓	✓	
5.14.6 Other medical technologies (e.g. orthotics, tilt tables, prosthetics, robotics)	✓		
5.15 Specialised equipment/techniques/therapies			10
5.15.1 Electro-physical modalities (e.g. hot packs, cryotherapy, ultrasound therapy, electrical stimulation (interferential therapy, transcutaneous electrical stimulation, electro-muscular stimulation)	✓	✓	
5.15.2 Other electrotherapy modalities (e.g. LASER, shockwave therapy, light/photo therapy, ultraviolet radiation, shortwave diathermy)	✓		

Content/ Exposure/ Activity	Knowledge level	Practical/ clinical skill(s) component	Minimum credits
5.15.3 Aqua/hydrotherapy	✓		
5.15.7 Other technologies (e.g. vibration therapy, ultrasound imaging for musculoskeletal diagnostics and rehabilitation, virtual reality, mirror imaging, nanotechnology, genomics and robotics)	✓		
4.18.7 Dry needling	✓		
5.16 Clinical training*			100
5.16.1 Setting			
a. Primary (rural, community, homes)	✓	✓	
b. Secondary (-hospital)	✓	✓	
c. Tertiary (-hospital)	✓	✓	
d. Intensive care unit	✓	✓	
e. In-patient	✓	✓	
f. Out-patient	✓	✓	
g. Clinic (specialised)	✓	✓	
h. Private practice	✓	✓	
i. Sports practice/event (can include recovery massage)	✓	✓	
j. School (e.g. schools for children with special needs)	✓	✓	
k. Retirement homes	✓	✓	
5.16.2 Exposure/conditions			
Broad spectrum clinical conditions and/or patient presentations	✓	✓	
5.16.3 Activities			
a. Recordkeeping	✓	✓	
b. Statistics (consultation, management and outcome statistics)	✓	✓	

Content/ Exposure/ Activity	Knowledge level	Practical/ clinical skill(s) component	Minimum credits
c. Inter-professional education (e.g. ward rounds, case discussions)	✓	✓	
d. Writing reports and referral letters	✓	✓	
e. Group education and exercise classes	✓	✓	
f. Observe medical/nursing and/or surgical procedures	✓	✓	
g. Reflection	✓	✓	
TOTAL			480

6. **Quality assurance**

- 6.1 Quality assurance measures should be aligned with the institutional policy, and the program must be **accredited** by the PPB Board of the HPCSA, a process that occurs every 5 years.
- 6.2 Lecturers lecturing and assessing physiotherapy specific content and or involved in clinical training must must comply with all requirements for annual registration with the HPCSA and be registered as a Physiotherapist with the HPCSA.
 - 6.2.1 It is recommended that lecturers (including external lecturers and clinical supervisors) have a master's degree and/or at least 3 years of clinical experience; and
 - 6.2.2 should demonstrate CPD and ongoing development in teaching and learning
 - 6.2.3 **Performance appraisal** for all lecturers/educators (360° recommended)
 - 6.2.4 Lecturer/educator peer assessment (voluntary but recommended especially for new lecturers/educators)
- 6.3 **Comprehensive study guides** in which exit outcomes, the learning activities, tests and/or examination processes and promotion criteria are clearly indicated, must be available to all students before the start of any module/course.
- 6.4 **Student feedback** must be sought
 - 6.4.1 Per module (at least every two years for existing modules and with new modules/ courses must be conducted within the first year)
 - 6.4.2 Lecturer feedback (every 1 - 2 years)
 - 6.4.3 Program feedback (this occurs at the end of the fourth/final year and if possible repeated 6-12 months after graduation)
- 6.5 **Lecturer to student ratio:**
 - 6.5.1 Theory only - this will depend on mode/method of delivery, the resources and space available
 - 6.5.2 Theory and practical demonstrations - a ratio of no more than 1:25 is recommended
 - 6.5.3 Theory and group work (e.g. problem-based learning) - a ratio of 1:15 is recommended
 - 6.5.4 Practical/tutorials - a ratio of 1:20 is recommended
 - 6.5.5 Clinical setting (e.g. around a patient bedside) - a ratio of 1:5 is recommended (but this can vary based on the nature of pedagogy and clinical setting e.g. ICU vs gym/rehabilitation setting)
- 6.6 Clinical placements Students must work under **supervision** by a registered Physiotherapist. Refer to the guidelines for placements without a qualified physiotherapist (Addendum 2)

6.7 Assessment:

6.7.1 Internal moderation

All summative assessments must be moderated (i.e. checked for alignment with module outcomes and to ensure editorial quality) in line with the institutional policy.

6.7.2 External moderation

6.7.2.1.1 All exit level module outcomes (i.e. all NEQF 8 exit level modules) and all final year courses/modules must be externally moderated (i.e. checked for alignment with module and program outcomes; and that assessments validity and reliability)

6.7.2.1.2 All students should be seen (at least in part) by an external examiner (note that an external moderator should not be considered a "second examiner" although may fulfil dual roles)

6.8 Facilities:

These must be adequately equipped and maintained to deliver the program, i.e. meet the program and course/module outcomes and comply with basic health and safety regulations.

Addendum 1

PPB BOARD GUIDELINES FOR WORK INTEGRATED LEARNING (WIL) IN B DEGREE (PROFESSIONAL) PROGRAMS

BACKGROUND:

The CHE in their guideline document¹ for Work integrated learning (WIL) states that “university teachers should think carefully about the relationship between the workplace and the university. A university education is not about job training, and a WIL curriculum should not be dictated by economic or narrow workplace interests. Instead the university must be (as it always has been) responsive to society and responsive to the needs of students to become productive members of society. Beyond that, part of the mission of higher education has also been to look beyond immediate problems and to prepare students to change and improve existing practices, not merely to adapt to the world as they find it”.

DEFINITION:

WIL is used as an umbrella term to describe curricular, pedagogic and assessment practices, across a range of academic disciplines that integrate formal learning and workplace concerns and includes **classroom-based and workplace-based forms of learning** that are appropriate for the professional qualification. Academic and workplace practices are **aligned for the mutual benefit of students and workplaces**¹.

APPROACHES:

The integration of theory and practice in student learning can occur through a range of WIL approaches. WIL is primarily intended to enhance student learning, and **should respond to concerns about graduateness,**

employability and civic responsibility. Examples include: action-learning, apprenticeships, cooperative education, experiential learning, inquiry learning, inter-professional learning, practicum placements, problem-based learning, project-based learning, scenario learning, service-learning, team-based learning, virtual or simulated WIL, work-based learning, work experience, workplace learning, etc. (refer to CHE's WIL Good Practice Guide for definitions of these terms p:71-77).

Where does it fit and what are the HPCSA minimum requirements?

It is important to note that WIL should occur **throughout the four years** of the program. Typically, the earlier years will focus more on knowledge and clinical skills acquisition/training which can be practiced on healthy models/ peers in laboratories or in virtual or simulated environments or in work-place settings. Transition from theory to practice can be facilitated in many ways through for e.g. problem-based, scenario-based and enquiry-based learning which may occur in the classroom and/or the clinical/workplace environments. The further development of graduate attributes, also referred to a 'critical skills' and professional competencies, should occur in workplace (real world) settings.

The PPB board does not stipulate the minimum no of hours to be spent on skills acquisition/training. There is a common understanding however that whichever learning strategy is used for this, the teaching and learning and assessment practice ensures that students are competent to apply these to patients/ clients in real world/ workplace settings. The minimum requirements for workplace-based learning (WPBL) however are specified.

For a 4-year professional program:

Year	Hours	Remuneration
> year 3 & 4	1 000*	unpaid

* hours allocated per year is not specified (and some of the clinical hours may be offered in Years 1 & 2)

For Physiotherapy, a year of Community Service (paid) is required before graduates can register as professionals with the HPCSA.

Currently this requirement does not exist for Biokinetics or Podiatry graduates.

For the Biokinetics 3+1 year programs:

Year	Hours	Remuneration
Year 1 (honours year)	500hr (clinical rotations)	unpaid
Year 2 (internship)	800hrs (fulltime 12-month placement)	paid

Outcomes:

The outcomes for WPBL must be clear and the teaching and learning activities, exposure and assessment aligned with these outcomes.

The clinical or workplace setting should:

- ensure that students have adequate exposure
- ensure that students have equivalent exposure (*it is recognised that not all students can work in all the same settings*)
- allows for development of well-rounded healthcare professional (includes the development of graduate attributes and/or critical competencies (e.g. communicator; scholar, professional, collaborator, health advocate)

Assessment:

The following are recommended for assessment in WPBL:

- Regular formative and summative assessment (e.g. demonstration of practical skills (DOPS), mini clinical exam (mini-CEX), case discussions, 'setting specific exit' exam/ assessment)
- Portfolio – demonstrating student's growth across the 1000hrs
- Exit exam (which is externally moderated)

The following are **recommended for further reading**:

1. Council for Higher Education: Work Integrated Learning: a good practice guide (2011).
https://www.che.ac.za/sites/default/files/publications/Higher_Education_Monitor_12.pdf
2. Yousuf Guraya, S. (2015). Workplace-based Assessment; Applications and Educational Impact. *The Malaysian Journal of Medical Sciences: MJMS*, 22(6), 5–10.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5295751/>
3. Buckley, S. et al. (2009). The educational effects of portfolios on undergraduate student learning: A best evidence medical education (BEME) systematic review. *BEME guide no. 11. Medical Teacher*, 31(4), 282-298. doi:10.1080/01421590902889897
<http://www.tandfonline.com/doi/full/10.1080/01421590902889897>
4. Liu, C. (2012). An introduction to workplace-based assessments. *Gastroenterology and Hepatology from Bed to Bench*, 5(1), 24–28.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4017451/>