

ISPO EDUCATION STANDARDS for PROSTHETIC/ORTHOTIC OCCUPATIONS



INTERNATIONAL
SOCIETY FOR PROSTHETICS
AND ORTHOTICS





In late 2012, I was in Afghanistan documenting the impact of war on the civilian population, a story that rarely gets the attention it warrants.

I spent a lot of days meeting amputees at the International Committee of the Red Cross (ICRC) limb-fitting centre in Kabul, which is run by the legendary prosthetist Alberto Cairo. This near-mythical centre is one of the few places in Afghanistan where amputees can get treatment.

This story particularly resonates with me. In February 2011, I was also in Afghanistan. Whilst there, working as a photographer, I stepped on an Improvised Explosive Device (IED), as a result I became a triple amputee, losing both legs and my left arm. After a year in hospital and a few months of rehabilitation, this assignment in Afghanistan was the first work I did since my injury.

On my final day there, as I was preparing to leave, I met a boy, Ataullah, and his father. They had come to the centre so that Ataullah could have a new leg fitted and try a prosthetic arm for the first time.

Just over a year before, while walking to school, he stepped on a landmine. His brother and nephew were the first to reach him and raced him to his father who then drove him eight hours to the emergency hospital in Kabul. He never lost consciousness during the journey.

People always ask me if I ever cry taking photographs, if there is ever a point where it just becomes emotionally too much. The reality is that, no matter how difficult the situation, I somehow have always managed to take the photograph. To me, taking a photograph has always seemed an act of professionalism born out of a desire to take the best picture possible, and tell the subject's story as honestly as I can. It is when I get home that the photographs really hit me. Yet, I have always persevered, and somehow been able to detach myself.

But that day was different. Through my viewfinder as I watched Ataullah clumsily struggle to take his first steps on the new plastic leg while his shattered arm swung beside him. As we followed him into the limb-fitting area, prosthetists and doctors engulfed him. All I could see was a small, lost child; bewildered

To introduce the new ISPO Education Standards, it only seemed right to highlight a story that reminds us of why we do what we do and underline the responsibility we have as educators to train students at the highest level.

These students will eventually provide prosthetic and orthotic services that enable people like Ataullah to have equal opportunities to fully participate in society.

On behalf of the ISPO Education Committee, I would like to thank Giles Duley for sharing this story and reminding us of what truly is important.

Bryan Malas
Chair, ISPO Education Committee



in a sea of adults. They poked and prodded, attaching straps and plastic limbs while Ataullah stared blankly.

I raised my camera, trying to capture the scene in front of me, but all I could think of was everything I had been through in the last two years, and how, as a 40-year-old man, it had nearly broken me.

All I can think about is that no seven-year old should have to go through what I went through. That no seven-year old should be maimed in such a way, left with a legacy of pain and disability, blown up when walking to school. I couldn't take my eyes away from his glazed, lost expression, his eyes, as big as saucers, staring blankly back at my camera. For once, I couldn't take it any more. I put the camera down, my vision blurred with emotion, and I left the room.

Giles Duley
CEO, Legacy of War Foundation

Preface

An estimated 1 billion people are in need of assistive products, and this number is anticipated to grow to 2 billion by 2050 (1). A significant workforce shortfall exists in the field of prosthetics/orthotics, with a limited number of training programmes around the world (2). The World Health Organization indicates that only 1 in 10 persons who require prostheses or orthoses have access to appropriate services (3).

Globally, health professional education needs to transform and expand in response to the evolving needs of persons with disabilities and the aging population. Education programmes should develop health personnel with the right mix of skills and competencies to meet the needs of people who use assistive devices (4). Prosthetic/orthotic occupations are no exception, with a significant shortage in these occupations existing in all parts of the world (3). The following prosthetic/orthotic education standards aim to ensure that programmes have the infrastructure and resources to develop students into entry-level practitioners that can increase access to services and provide the appropriate quality of prosthetic/orthotic services.

The development of these standards was guided by the World Health Organization and relevant health professions to ensure that the format and content are appropriate and evident at policy and operational levels, across a range of settings, within and between countries.

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Executive Summary

The International Society for Prosthetics Orthotics (ISPO) Education Committee has established new standards and procedures for prosthetic and orthotic programmes and pathways¹ seeking ISPO accreditation. These changes replace the prior standards and process as recommended here in the ISPO Education Standards for Prosthetic/Orthotic Occupations and further detailed in the accompanying *ISPO Education Standards Handbook: Process and Procedures for Accreditation*.

¹. Hereinafter referred to as "programme(s)"

The new standards revisions update outmoded terminology and reflect the modern shift towards progressive, outcome-based models of accreditation, while preserving the fundamental tenets of the profession and integrity of the accreditation process. The new peer-developed² standards reflect the international community's core values and unifying principles and will ensure both consistency and quality in prosthetic and orthotic education worldwide. Successful accreditation signifies that a programme meets infrastructure and resource requirements and produces highly-qualified entry-level practitioners, thereby increasing access to quality prosthetic and orthotic services.

². CHEA. [The value of accreditation, 2010](#) [accessed 4 September 2018]

The revision of the ISPO accreditation standards and procedures was a massive undertaking that began in 2010 and included extensive literature review, stakeholder feedback, and alignment with the following:

- Mainstream accreditation practices,
- International Labour Organization's Standard Classification of Occupations,
- World Health Organization (WHO) prosthetics and orthotics service standards,
- Global National Qualification Framework.

The details of this multi-step process along with the rationale, format and final description of the new standards can be found in the forthcoming pages of this document.

1. ISPO Education Standards for Prosthetic/Orthotic Occupations

The new ISPO Education Standards were developed with guidance from health professionals, in consultation with leading educational experts and practitioners in the field, and align with the occupational classifications of the profession: 1) Prosthetist/Orthotist, 2) Associate Prosthetist/Orthotist, 3) Prosthetic/Orthotic Technician. ISPO has established 15 standards that are categorized according to five domains:

- Entry-level personnel,
- Institutional/programme requirements,
- Programme curriculum,
- Faculty,
- Programme admission.

Each standard includes "evidence of compliance" statements to clarify the standard's meaning and nature. Programmes seeking ISPO accreditation will be measured against these 15 standards.

2. ISPO Education Standards Handbook: Process and Procedures for Accreditation

The supporting *ISPO Education Standards Handbook* outlines the process and procedures for ISPO accreditation and improves on previous documentation by providing greater clarity and transparency. As part of this update, ISPO is moving from a manual to an automated system to streamline and optimize the accreditation process. Improvements include:

- Online application,
- Online Self-Study,
- New costing-model,
- A concise and efficient reporting mechanism and timeline for accreditation status.

In addition, the ISPO Education Committee is developing an automated reporting document for site visits. The automated system will allow the report to be completed in real time and specify programme compliance with the standards. This will allow the site visit audit team to provide immediate feedback to the programme and shorten the time from site visit to awarding accreditation. Finally, online training modules are in development and will be required for all auditors. The intent is to standardize the training process and better equip auditors for site visits and accurate reporting.

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Glossary

Assistive technology – Organized knowledge and skills related to assistive products, including systems and services. Assistive technology is a subset of health technology (3).

Associate Prosthetist/Orthotist – a health care professional who uses evidence-based practice to provide clinical assessment, technical design, fabrication of prosthetic/orthotic devices, and implement the clinical treatment plan. Associate Prosthetist/ Orthotists work as part of the health care team under the supervision of the Prosthetist/Orthotist. They set goals for the use of prosthetic/orthotic devices and deliver services to achieve desired outcomes. This occupation aims to enable service recipients, so they have equal opportunities to fully participate in society.

Blended learning – An education programme that uses a combination of traditional instructional methods and digital media to provide education, training, and evaluation.

Orthosis, orthotic device, or product – Externally-applied device used to modify the structural and functional characteristics of the neuromuscular and skeletal systems (3).

Orthotics – Science and art of treating individuals with the use of orthoses (3).

Prosthetic/Orthotic occupations – For the purpose of this document, “prosthetic/orthotic occupations” or “prosthetic/orthotic personnel” refers to individuals who have education and training in both areas of prosthetic/orthotic practice, or to individuals who have education and training in only one area and work within a limited scope of practice (e.g. single discipline). Individuals with education and training in both areas who specialise in one area after graduation are also included.

Prosthesis, prosthetic device, or product – Externally-applied device used to replace wholly or partly an absent or deficient limb segment (3).

Prosthetics – Science and art of treating individuals with the use of prostheses (3).

Prosthetic/Orthotic Technicians – Non-clinical service providers that support technical design of prosthetic/orthotic devices and are competent in the fabrication of prosthetic/orthotic devices. Prosthetic/Orthotic Technicians work as part of the health care team. This

occupation aims to enable service recipients so they have equal opportunities to fully participate in society.

Prosthetist/Orthotist – A health care professional who uses evidence-based practice to provide clinical assessment, prescription, technical design, and fabrication of prosthetic and/or orthotic devices. Prosthetists/Orthotists work independently or as part of the health professional team. They set goals and establish rehabilitation plans that include prosthetic/orthotic services and clinical outcome measures. The profession aims to enable service recipients so they have equal opportunities to fully participate in society.

Service unit – A prosthetic/orthotic service unit may refer to any place where professionals and users interact and design, manufacture, customize, fit, deliver, and maintain prostheses and orthoses (3).

Stacked/ladderized education – A system of learning that allows students to progress between various levels of education and training with the recognition of prior learning.

Part 1: International Standards for Professional Education in Prosthetic/Orthotic Occupations

Goal of International Standards

International standards for education of prosthetic/orthotic occupations aim to ensure that programmes have in place the infrastructure and resources to develop students into entry-level practitioners that are able to increase access and provide the appropriate quality of prosthetic and orthotic services.

International education standards underpin an external, independent assessment and subsequent accreditation awarded to programmes that satisfy the standards. This promotes consistent, high-quality training around the world.

The International Society for Prosthetics Orthotics (ISPO) International Education Standards aim to globally:

- Support new training programmes to achieve standards and/or encourage the development of existing programmes,
- Enhance traditional education models and encourage the use of new or innovative techniques for learning and assessment,
- Ensure that graduate characteristics meet the need for volume and quality of services regardless of the setting,
- Encourage programmes to ensure graduates possess the knowledge, skills, and attributes necessary to continue learning beyond their initial education.

A number of considerations are made when working toward a global standard for prosthetic/orthotic education, including:

- Careful consideration and strategic planning specific to each setting,
- Education pathways that take into consideration local culture and customs,
- A variation of entry levels for programmes,
- Continuous occupational development and career advancement opportunities,
- Graduate retention and employment in the profession.

Standards can be used by education institutions as a tool for programme reflection, internal evaluation and development, and encourage stakeholders to invest in infrastructure and capacity building.

Programmes and their graduates must meet established criteria within national structures. This may include but is not limited to governing bodies for higher education, health, and subject matter experts (e.g. Ministry of Education, Department of Health, and Professional Societies). Alignment within national structures helps to integrate prosthetic/orthotic occupations and allows for improved engagement in decision-making, policy development, and strategic planning.

Background

Access to assistive products ensures personal mobility and is a right agreed upon by Member States, as defined in the United Nations Convention on the Rights of Persons with Disabilities (5).

The positive impact of assistive products, including prostheses and orthoses, affects mobility and has wider socioeconomic benefits. Assistive products reduce reliance on social services and enables work (1,6). It also reduces the burden on health systems by enabling individuals to live healthier lives, reducing hospital admissions, and the need for long-term care (1).

The Global Need for Prosthetic/Orthotic Professionals

The WHO reports that an estimated 35-40 million people currently require prosthetic/orthotic services, with only 1 in 10 persons having access to such services (3). Considering the global context, with many nations experiencing a rise in aging populations and a subsequent increased incidence of non-communicable diseases such as diabetes, more than 2 billion people are projected to require prosthetic and/or orthotic treatment by 2050 (1). These statistics present the current unmet need and highlight the likelihood of significant underservicing of those who require prosthetic and/or orthotic care. Low levels of access to prosthetic and orthotic services is hampered by a broad lack of understanding of the benefits and need for these services, as well as a failure of infrastructure to provide appropriate services (7).

Prosthetic and orthotic treatment requirements may span a person's lifetime, with users receiving ongoing evaluation, provision of devices, maintenance, repair, and replacements over time(6). Therefore, education programs must develop prosthetists and orthotists that are competent to provide a continuum of care across a person's lifespan.

Long-term planning is also needed to encourage professional recognition and retain prosthetic and orthotic professionals for service sustainability (4).

For post-graduation, prosthetic and orthotic professionals must have access to ongoing education opportunities. The ongoing science and technology evolution associated with prosthetic/orthotic services is likely to place an increasingly-complex demand on prosthetic/orthotic occupations, alongside increasing costs associated with such services that may place a high burden on service delivery mechanisms.

Estimating international service delivery efficiencies is difficult. However, studies across 13 developing countries reported a wide variance in service delivery volume. On average, clinicians saw 16 individuals per week with a range of 2 to 45 weekly patient encounters. While some constraints were related to technology access and financial barriers, limits were also imposed by the need for clinicians to dedicate time to technical implementation (8). Further investigation is needed in this area.

As with other health professions such as physiotherapy and occupational therapy, an increase in the number of appropriately trained professionals in prosthetic/orthotic occupations is needed. The WHO encourages a sustainable expansion of education and training for health professionals to ensure access to appropriate quality and quantity of services (4).

The significant level of need, and contrasting low-level of access, demands that the prosthetic and orthotic workforce has effectively expanded. Education standards are needed to meet the expectations for access to appropriate, safe, and effective prosthetic/orthotic services. Without more trained and educated personnel, services will remain inadequate, uncertain, or at the point of crisis (3).

An appropriately trained workforce is a key factor in delivering prosthetic/orthotic services (1,5,9–14). The 2016 **WHO Priority List of Assistive Products** identified trained personnel as essential for proper prescription, fitting, user training, follow-up, and maintenance. Without this key aspect products are often abandoned, of little benefit, or harmful (1).

International education standards for entry into prosthetic/orthotic occupations are designed to ensure that user needs are met and help protect users from risks associated with inappropriate treatment. These standards aim to increase access to quality care and ensure that sustainable effective services are available, regardless of setting.

Prosthetic/Orthotic Professional Roles

The prosthetic and orthotic workforce includes three distinct roles, two involving clinical care and one non-clinical.

Clinical personnel include:

- Prosthetist/Orthotists,
- Associate Prosthetist/Orthotists.

Non-clinical personnel include:

- Prosthetic/Orthotic Technicians.

Historically, this skill mix has existed in prosthetic/orthotic occupations to varying degrees, with ISPO Category I and Category II providing direct user care and Category III personnel implementing fabrication procedures. These standards update the competencies of historical categories to reflect the current and future developments of the professions, and more clearly define what education programmes are needed to ensure graduates achieve appropriate competencies.

The WHO defines Prosthetist and/or Orthotist as a person who has completed an approved course of education and training and is authorized by an appropriate national authority to design, measure, and fit prostheses and orthoses (3). ISPO encourages all prosthetic/orthotic personnel to meet these education/training criteria, work within an appropriate scope of practice, and supervision structures.

History of ISPO Education Standards

In 1991, WHO and ISPO established standards and accompanying guidelines for training prosthetic/orthotic service providers. These standards and guidelines were voluntarily adopted by 38 programmes in 26 countries and 81 programmes (and/or national pathways) (14).

ISPO's historical nomenclature and definitions (i.e., Category I, II, and III) have been valuable tools in defining the profile of individuals in various prosthetic/orthotic occupations across settings. However, ISPO Categories have been difficult to communicate to mainstream audiences and feedback from the ISPO membership suggested these categories are not well understood. To address these concerns, ISPO revised its nomenclature and definitions to clarify the similarities and differences between prosthetic/orthotic occupations and update competencies to more accurately align with the current status of prosthetic/orthotic occupations globally. Table 1 outlines the current nomenclature and summarizes the role of each occupation. Further details of the individual occupations and supervision structure are available in Table 3.

Table 1 ISPO Occupation Classifications

ISPO Occupation Classification	Short Description
Prosthetist/Orthotist	The training level aimed at the full breadth of clinical service, leadership, advancing models and/or methods of service delivery.
Associate Prosthetist/Orthotist	The training level aimed at general clinical service delivery.
Prosthetic/Orthotic Technician	The training level aimed at technical design and fabrication of devices without providing clinical intervention.

Factors known to restrict the volume of available services include the lack of facilities, materials, planning, and funding, as well as constraints in workforce volume or skill mix.

WHO recommends that each clinician is supported by two non-clinicians, such as a technician or other assistants. However, in settings where resources are limited, particularly smaller, decentralised service units, the ratio of non-clinicians to clinicians may need to be increased. For tertiary or specialist units, a 1:1 ratio is usually appropriate (15). These ratios highlight the need for education programmes to establish a workforce with an appropriate mix of skills.

Current Education Context

For sustainable growth of the prosthetic and orthotic professions, training across all three levels (Prosthetist/Orthotist, Associate Prosthetist/Orthotist, Prosthetic/Orthotic Technician) is required in most settings to ensure an optimal service delivery.

Over the past 50 years, prosthetic and orthotic education models have changed considerably from on-the-job-based training to now include tertiary institutions offering higher-level university degree programs. This development was observed across the spectrum of allied health professions. Education models differ greatly across international settings. Historically, prosthetic/orthotic training was delivered in apprenticeship models that were considered to have variable results. Following international meetings in the late 1960s and early 1970s on training standards for prosthetic/orthotic personnel, the desired training level was considered as a university degree (16). Since that time, prosthetic/orthotic programmes have continued to evolve as technology and the need for services have expanded. Models for training prosthetic/orthotic personnel have diversified and now include traditional colleges and universities, blended learning, and upgrading or stacked/ladderized approaches that allow for various entry and exit points within the occupational pathway.

Prosthetists/Orthotists are typically trained at the level of a university undergraduate degree and, in some settings, have advanced to a post-graduate qualification. In one study of European training programmes for Prosthetists/Orthotists, entry level was relatively consistent but the programme duration and qualification upon completion varied. In Europe, programmes most commonly conferred a bachelor's degree but ranged from a diploma to a master's degree. The majority of programmes required practical experience before graduation and almost half indicated that graduates were required to complete an internship after graduation before they practice independently (17).

Recent assessments in less-resourced settings, both clinical classifications (Prosthetists/Orthotists, Associate Prosthetists/Orthotists), were able to provide satisfactory treatment and appraise their clinical work. However Prosthetist/Orthotists were in limited supply in these regions and were found in more senior roles (i.e., management, teaching, mentoring, and treating complex cases) (8). WHO recommends that individuals at clinical training levels should be present in each service unit (15).

For Associate Prosthetists/Orthotists, a range of models represent a spectrum of training. These models are delivered in tertiary education settings using traditional education programmes, modular, and blended learning approaches. In studies of the impact of graduates from internationally recognized programmes in less-

resourced settings, the quality of prosthetic/orthotic device fit was not significantly different between traditional education and blended learning approaches (8).

For Prosthetic/Orthotic Technicians (non-clinicians) training is highly variable, ranging from traditional models of tertiary education, apprenticeships or direct instruction, and on the job training. Prosthetic/Orthotic Technicians training is an essential component of prosthetic/orthotic services (18). However, appropriately trained Technicians are under-represented in the workforce and few standardised training programmes are known to exist globally.

In recent studies about the impact of graduates who have met the ISPO training standards across 13 countries, investigators found that graduates of ISPO recognised programme enabled service recipients to have improved independence, as well as access to education and employment (8).

The occupational profile and classification of prosthetic/orthotic occupations must accurately reflect the competencies and the practice scope of the range of prosthetic/orthotic personnel. Adequate resources must be allocated to meet the education and service provision standards, thereby ensuring an adequate volume of appropriately trained personnel.

Intended Use of Standards

The ISPO Education Standards are intended to support the ISPO Accreditation Process.

The ISPO Accreditation Process is an objective of the external audit to ensure that education programmes meet international standards for occupational competencies. ISPO Accreditation is a voluntary process of quality assurance but should not be used as a substitute for national or local recognition and/or accreditation, where such standards exist. Policy makers, government ministries, regulatory bodies, or funding agents may use international standards as a benchmark for education, needs assessment, or service review.

When initially educating other health professionals, education standards can be used to:

- Develop an international approach to evidence-based educational programmes,
- Employ profession specific competencies to provide a guide for curriculum development,
- Encourage the establishment of programmes and pathways that meet national, regional, and societal needs and expectations,

- Create benchmarks for ongoing quality improvement and education progression.

Global standards may also:

- Act as a catalyst for education change and quality improvement,
- Assist in advocacy to build capacity for sufficient numbers of prosthetic/orthotic personnel and a competent, high-quality prosthetic/orthotic workforce,
- Act to encourage standards development for advanced prosthetic/orthotic education (19).

Process and Methodology

As part of the ongoing review and revision of ISPO standards, work towards this updated standard began in 2010.

Following a multistep process to consult key stakeholders and inform recommendations, ISPO implemented the following steps:

- **Step 1:** ISPO membership and prosthetic/orthotic educators were surveyed regarding the understanding, integration, and impact of the previous standards and guidelines,
- **Step 2:** Focus groups were convened at the ISPO Global Educators Meeting in Kobe Japan (June 2014) to discuss survey results and solicit feedback from expert educators,
- **Step 3:** There was a complete literature review and key informants were consulted to seek and review education standards from various professions in both national and transnational contexts,
- **Step 4:** The International Labour Organization's Standard Classification of Occupations 08 was reviewed to determine the current position of prosthetic/orthotic service providers within the international occupational framework,
- **Step 5:** A list of recommendations for education standards was established for consultation with key stakeholders and endorsed by the ISPO Executive Board.

Throughout the process, ISPO consulted and contributed to ongoing discussion among key stakeholders such as the World Health Organization, the International Committee of the Red Cross/Crescent, the United States Agency for International Development, Exceed, and Handicap International.

Review Process Results

Step 1 survey results from the ISPO membership and prosthetic/orthotic educators indicated that a limited understanding of the nuances that differentiate ISPO Categories existed and greater clarity was needed to ensure that individuals with the most appropriate level of training provide services.

When the results of the survey were presented and discussed in focus groups at the 2014 Global Educators Meeting, educators confirmed the following:

- Changes are required to improve clarity between Categories,
- A range of education models are being used successfully in various regions,
- Although differences exist in how graduate attributes are achieved, most programs expected common outcomes and/or competencies.

The combined results suggested a need to define the competencies and outcomes of all prosthetic/orthotic occupations more clearly and use mainstream language. In addition, prosthetic/orthotic programmes and personnel should seek to align competencies, outcomes, and descriptors with internationally accepted frameworks to improve the transparency and transferability of qualification, to allow upgrading, and seek pathways for increased access to appropriate services.

The ISPO Standards Subcommittee synthesised the collected data and established a process to inform the development of the standards for the education of prosthetic/orthotic occupations, in consultation with key stakeholders.

Context of the Standards

In recent years a number of countries have worked through an evidence-based approach to verify and/or establish their respective national standard for competencies of prosthetic/orthotic professionals (20-23). The findings of these independent national processes reinforce that similarities exist in the competencies of prosthetic/orthotic professionals internationally.

National frameworks should consider their setting and specific needs of their population for access to quality prosthetic/orthotic services. Education programmes should be planned to meet the current and projected need for services within their setting.

- International education standards and occupational classifications are becoming increasingly common, particularly in allied health professions (24). As an international organisation, ISPO has aligned its education standards to established transnational competency-based frameworks to ensure that:
 - Classifications are transparent between nations to improve the international mobility of graduates,
 - Classifications are clear for policy makers, funding agents, and key stakeholders across international boundaries.

The current demand for appropriately trained prosthetic/orthotic personnel indicates that each country should establish and regularly review its strategic plan to meet the need for prosthetic/orthotic services (3) in the region.

Plans should be based in four key areas, as identified by WHO; policy, product, personnel and provision of services (3). Plans must include:

- A clear definition and scope of practice for each occupation,
- Education programmes that ensure that service providers meet or exceed the established international competencies,
- A range of education levels and training programmes to ensure that services incorporate an appropriate blend of prosthetic/orthotic personnel to optimise resources,
- Prosthetic/Orthotic services should be included in health care models for long-term sustainability of both education/training and prosthetic/orthotic services.

Prosthetic/Orthotic Occupational Classification

Prosthetic/orthotic occupations are a spectrum of specialised health care disciplines that combines a unique blend of clinical and technical competencies to provide assistive products for people with physical impairments. In addition to treatment planning and the implementation for custom prosthetic/orthotic interventions, professionals may also be responsible for modular or prefabricated devices, soft goods, mobility aids, postural supports, wheelchairs and other assistive products related to prosthetic/orthotic services. It is therefore imperative that an appropriate occupational structure is established and maintained to ensure that service recipients receive care from qualified professionals.

The following definitions and descriptions represent the minimum essential knowledge and skills for entry to practice in each occupational classification level. Individual programmes may exceed the minimum standard without achieving the threshold for the next level of classification. Table 2 shows the alignment between various occupations and a sample transnational framework.

Table 2 Occupational Classifications.

ISPO Occupational Classification	European Qualification Framework	Summary
Prosthetist/Orthotist	Minimum Level 6	The training level aimed at the full breadth of clinical service, leadership, advancing models and/or methods of service delivery.
Associate Prosthetist/Orthotist	Minimum Level 5	The training level aimed at general clinical service delivery.
Prosthetic/Orthotic Technician	Minimum Level 4	The training level aimed at technical design and fabrication of devices without providing clinical intervention.

A **Prosthetist/Orthotist** is a health care professional who applies the best available evidence to provide clinical assessment, prescription, technical design, and fabrication of prosthetic and/or orthotic devices. Prosthetists/Orthotists work independently and as part of the health professional team. They facilitate treatment plans featuring patient centred goals and establish rehabilitation plans that include prosthetic/orthotic services and monitor outcomes through the application of clinical outcome measures. The profession aims to facilitate service recipients so they have equal opportunities to fully participate in society.

The Prosthetist/orthotist is a clinical service provider with all the attributes of an Associate Prosthetist/Orthotist and Prosthetic/Orthotic Technician, but who has completed a higher level of education programme with a scope of practice that includes leadership and training capabilities. These defining elements include:

- A broad range of clinical competence,
- Exposure to a wide range of technologies,
- The ability to integrate the best available evidence, clinical experiences, critical inquiry and patient goals into decision making,
- The ability to supervise or mentor the practice of Associate Professionals and Technicians.

Prosthetists/Orthotists are expected to have the highest level of training, decision-making skills, and diversity of competence. Therefore, Prosthetists/Orthotists are expected to act as leaders, mentors and supervisors for Associate Prosthetists/Orthotists and Prosthetic/Orthotic Technicians whose entry to practice requires a more specific list of competencies and a narrower scope of practice.

An **Associate Prosthetist/Orthotist** is a health care professional who uses evidence-based practice to provide clinical assessment, technical design, fabrication of prosthetic/orthotic devices and implements the clinical treatment plan. Associate Prosthetists/Orthotists work as part of the health care team, under the supervision of the Prosthetist/Orthotist. They set goals for use of prosthetic/orthotic devices and deliver services to achieve desired outcomes. This occupation aims to facilitate the service recipients so they have equal opportunities to fully participate in society.

Associate Prosthetists/Orthotists possess many of the attributes of a Prosthetic/Orthotic Technician, in addition to the competencies necessary to provide clinical treatment. In collaboration with other members of the health care team they aim to provide treatment that allows individual users to lead more active and independent lives. This work requires substantial clinical and technical judgment. The principles of biomechanics, pathomechanics, gait analysis, kinesiology, anatomy and physiology are crucial to the ability to provide comprehensive care and a positive clinical outcome. Clinical assessments, treatment and education are part of the Associate's responsibility and require collaborative communication skills. Associate Prosthetists/Orthotists are accountable for working under the supervision and/or mentoring a Prosthetist/Orthotist.

Prosthetic/Orthotic Technicians are non-clinical service providers that support technical design of prosthetic/orthotic devices and are competent in prosthetic/orthotic device fabrication. Prosthetic/Orthotic Technicians work as part of the health care team. This occupation aims to support the clinical staff in enabling the service recipients so they have equal opportunities to fully participate in society.

Prosthetic/Orthotic Technicians are experts in device fabrication. They possess knowledge of material science, engineering principles, technical procedures/processes, and safe practice related to prosthetics/orthotics. This classification has no clinical contact with users. They may work directly with users to resolve technical issues, but they do not participate in clinical aspects such as fitting adjustments, static or dynamic alignment. Prosthetic/Orthotic Technicians are accountable for

work within their scope of practice under the supervision of a Prosthetist/Orthotist and/or an Associate Prosthetist/Orthotist.

Levels of Responsibility

ISPO has established minimum competencies for personnel entering the prosthetic/orthotic workforce. These competencies aim to ensure that graduates have entry-level knowledge and skills that allow for further development. Individuals entering prosthetic/orthotic occupations are expected to accept responsibility for their work within their scope of practice and comply with relevant ethical standards.

ISPO recommends an occupational structure that ensures supervision and/or mentoring so that the highest standard for quality of care is met and that access to service continues to grow. Table 3 lists the responsibilities of prosthetic/orthotic occupations. For each responsibility, the supervision level required by ISPO is identified in relation to the training levels for individual occupations. These levels of supervision are considered as the minimum standard for supervision recognized by ISPO, to establish relationships between prosthetic/orthotic occupations. Individuals, organisations, and/or national pathways may establish, at their discretion, more rigorous supervision levels.

The levels of supervision are:

- **Independent:** Associate Prosthetists/Orthotists and Prosthetic/Orthotic Technicians are responsible for working independently and accountable for actions related to their competencies. Independent performance should only be implemented once the graduate has reached a requisite level of experience, at which time the Supervising Prosthetist/Orthotist shifts towards a mentoring role.
- **Direct:** Associate Prosthetist/Orthotist and Prosthetic/Orthotic Technicians act under the supervision of the Prosthetist/Orthotist in the selected competency. The supervisor must review the assessment, management, implementation, or practice before service proceeds. The supervisor must be available for consultation throughout the delivery of services, through appropriate means.

Table 3 Occupational responsibilities by supervision and level of training

Activities	Associate Prosthetist/Orthotist	Prosthetic/ Orthotic Technician
Apply knowledge of physical sciences, social sciences, health sciences, culture, and natural sciences to professional practice.	Independent	Independent
Demonstrate proficiency in communication skills.	Independent	Independent
Participate in the development of practice management skills in various settings.	Independent	Independent
Work effectively in an inter/intra-professional collaborative setting.	Independent	Direct
Demonstrate social and professional responsibility and ethical behaviours in multi-cultural settings and scenarios.	Independent	Independent
Demonstrate competence in conducting appropriate examination, evaluation, and assessment of users across the individual's lifespan and within a broad continuum of care.	Direct	Not applicable
Optimise the use of appropriate equipment, materials, components, and techniques in prosthetic/orthotic services.	Independent	Independent
Demonstrate competence in developing and implementing appropriate prosthetic/orthotic service plans for users across the individual's lifespan within a broad continuum of care.	Direct	Not applicable
Demonstrate, in a systematic and effective manner, the ability to impart knowledge when providing education for users, their caregivers, other health professionals, and the public at large.	Direct	Direct
Demonstrate appropriate competencies in evidence-based practice.	Independent	Independent
Demonstrate appropriate competencies in research	Direct	Direct
Actively engage in lifelong learning activities.	Independent	Direct

Part 2: International Standards for Education Programmes

Following established guidance for the initial education of health professionals (19-21, 25, 26) and in consultation with practice leaders in prosthetics/orthotics and experts in education, ISPO established 15 Standards for prosthetic/orthotic education in five areas;

Table 4 International Domains and Standards for Education Programmes

Domain	Standard
1 Entry-Level Personnel	Standard 1
2 Institutional/Programme Requirements	Standard 2 Standard 3 Standard 4 Standard 5 Standard 6
3 Programme Curriculum	Standard 7 Standard 8 Standard 9 Standard 10
4 Faculty	Standard 11 Standard 12 Standard 13
5 Programme Admission	Standard 14 Standard 15

These Standards should be considered common among all programmes and/or pathways and may be used as the basis for design, implementation, or development of programmes. All Programmes should carefully consider the context of their setting and establish a curriculum that:

- Meets the need of its society,
- Prioritizes the relationship between students and user,
- Optimizes inter-professional collaboration in education (19).

The table below includes the international standards and the evidence required to demonstrate compliance with the Standard.

Table 5 International Standards and Evidence of Compliance for Education Programmes

Education Standards	Evidence of compliance
Standard 1 Programmes prepare entry-level personnel to be competent practitioners in prosthetics and/or orthotics	All Programmes must demonstrate that they prepare students to become entry-level practitioners by providing evidence of how the outcomes are achieved as detailed in Appendix III.
	Apply knowledge of physical sciences, social sciences, health sciences, culture, and natural sciences to professional practice.
	Demonstrate proficiency in communication skills.
	Participate in the development of practice management skills in various settings.
	Work effectively in an inter/intra-professional collaborative setting.
	Demonstrate social and professional responsibility and ethical behaviours in multi-cultural settings and scenarios.
	Demonstrate competence in conducting examination, evaluation, and assessment of users across the individual's lifespan and within a broad continuum of care.
	Optimise the use of equipment, materials, components and techniques in prosthetic/orthotic services.
	Demonstrate competence in developing and implementing prosthetic/orthotic service plans for users across the individual's lifespan within a broad continuum of care.
	Demonstrate, in a systematic and effective manner, the ability to impart knowledge when providing education for users, their caregivers, other health professionals, and the public at large.
Standard 2 Entry-level personnel are recognized within existing structures and have opportunities to further develop professionally	Demonstrate competencies in research and evidence-based practice.
	Utilize pedagogical approaches to promote student-centred learning that encourages knowledge seeking behaviour.
	Graduates of prosthetic/orthotic programmes meet regulatory body standards leading to licensure/registration where applicable.
	Graduates are awarded an appropriate qualification within national or international frameworks.
	Graduates are eligible for entry into advanced education programmes.

Education Standards	Evidence of compliance
Standard 3 Programmes have a transparent system of governance in place	Programmes define and make public their mission, vision, and objectives.
	Programmes educate students to meet the prosthetic/orthotic services needs of their societies.
	Programmes define educational and clinical outcomes.
	Programme faculty possess relevant expertise in the subject matter and procedures are in place to ensure that staff develop their competence and upgrade curriculum regularly.
Standard 4 Programmes meet requirements for accreditation or recognition within the local context	Programmes have in place and use a system of formative and summative assessment relative to defined competencies/outcomes.
	Programmes clearly define the role of theoretical and clinical educators, including but not limited to, faculty, clinical supervisors, mentors, preceptors, and teachers.
Standard 5 Programmes have infrastructure in place to meet the operational needs for sustainable education and training	Programmes are an integral part of a tertiary education institution that meets internal, national and/or international standards, recognised accreditation and/or governing body requirements.
	Programmes have criteria in place that meet accreditation or recognition standards for clinical practice components of their programmes, academic content, and demonstrate outcomes.
Standard 6 Programmes have partnerships in place to ensure that the programme implementation and development includes diverse practice settings and a range of support for the programme	Programmes have accessible, current, and relevant physical facilities, including but not limited to, classrooms, clinical practice sites, and fabrication laboratories.
	Programmes have accessible, current and relevant access to reference materials, information and communications technology.
	Programmes have systems and policies in place that ensure the safety and welfare of students, faculty, and other individuals who participate in educational activities.
	Programmes have personnel and human resources that meet programme and student demand.
Standard 7 Programmes implement a systematic approach to curriculum design	Programmes have a budget allocation that meets programme, faculty, and student needs.
	Programmes have a system in place for student-support services.
	Programmes have an equal opportunities system and policy in place.
Standard 8 Programmes implement a core curriculum focused on prosthetic/orthotic knowledge, skills and competencies	Programmes have effective partnerships. These may include but are not limited to: <ul style="list-style-type: none"> • The academic institution where the programme is located, • Other disciplines, • Clinical practice sites, • Clinical and professional organisations, • National or international partners.

Education Standards	Evidence of compliance
Standard 7 Programmes implement a systematic approach to curriculum design	Programmes plan and design a curriculum that takes into account workforce planning and national and/or international prosthetic/orthotic services plans and policies.
	Programmes plan and design a curriculum that meets national and/or international regulatory requirements for practice and education.
	Programmes provide educational activities and clinical and/or technical learning opportunities that deliver the knowledge and skills required to meet the needs of their respective populations.
	Programmes establish and demonstrate balance between the theory and practice components of the curriculum.
	Programmes demonstrate the use of recognised approaches to teaching and learning in their programmes.
	Programmes provide educational activities and clinical learning based on established competencies and grounded in current, repeatable and valid evidence.
	Programmes enable the development of clinical reasoning, problem-solving, and critical thinking.
	Programmes conduct regular evaluations of the curriculum, educational activities, and learning opportunities.
	Programmes include a range of stakeholder feedback when conducting evaluations of curricula, educational activities, and learning opportunities.
	Programmes offer opportunities for multidisciplinary or interdisciplinary content in educational activities and/or learning opportunities.
Standard 8 Programmes implement a core curriculum focused on prosthetic/orthotic knowledge, skills and competencies	Programme curricula meet or exceed the content of the latest edition of the ISPO competencies and outcomes for the level of training of the programme.
	Programmes provide core content in prosthetic/orthotic theory, practice, interventions and scope of practice for strengthening prosthetic/orthotic services through a user-centered approach.
	Programmes ensure supervised clinical learning experiences that support prosthetic/orthotic theory in diverse settings.
Standard 9 Programmes ensure that graduates are prepared to enter the workforce with basic competency in prosthetic/orthotic service provision in the cognitive (knowledge), psychomotor (skills), and affective (behaviour) learning domains.	Programmes have a minimum goal to prepare students to enter the workforce with basic competency in prosthetic/orthotic service provision in the cognitive (knowledge), psychomotor (skills), and affective (behaviour) learning domains.

Education Standards	Evidence of compliance
Standard 9 Programmes include curriculum partnerships, which ensure entry-level practitioners are prepared to practice in collaboration with other professionals	Programmes develop partnerships with other health care disciplines.
	Programmes use interdisciplinary teamwork approaches in their educational activities and clinical learning experiences.
	Programmes have access to, and arrangements for, clinical and/or technical learning exposures.
Standard 10 Programmes implement a transparent and systematic approach to assessment and feedback	Programmes assess student learning, knowledge, and skill development throughout their programmes, using reliable evaluation methodologies.
	Programmes provide timely objective feedback to students throughout the programme.
	Programmes assess their methods of evaluation and use feedback to improve the curriculum and/or the programme as a whole.
	Programmes use a variety of methods to assess the subject matter being studied.
	Programmes have student retention systems in place.
Standard 11 Programmes employ academic faculty with an appropriate skill mix	Leadership of prosthetic/orthotic programmes include experienced Prosthetists/Orthotists who hold a relevant qualification (See Evaluation Template for examples) at/or above the level being taught in the programme.
	Leaders are educated and proficient in prosthetic/orthotic competencies, experienced in administration and have minimum of three years of experience as an educator.
	Core academic faculty includes experienced prosthetic/orthotic service providers who demonstrate knowledge as educators and have a minimum qualification at/or above the level being taught in the programme.
	Other health professionals and associate professionals who are guest lecturers in prosthetics/orthotics programmes hold a qualification at/or above the level being taught in the programme and possess clinical or technical and educational expertise in their speciality.
	Faculty have received training in education principles and have mentorship experience in teaching.

Education Standards	Evidence of compliance
Standard 12 Programmes ensure that faculty responsible for clinical learning exposures possesses relevant teaching and clinical experience	Clinical faculty is comprised of Prosthetist/Orthotist and other health professionals who hold a qualification at/or above the level being taught in the programme.
	Clinical faculty teaching prosthetic/orthotic competencies have a minimum of three years of full-time clinical work experience.
	Prosthetists/orthotists with clinical expertise in the content area that is being taught within the programme are designated to supervise and teach students in that clinical practice area.
	Programmes form partnerships to secure a variety of qualified people to be clinical supervisors and teachers.
Standard 13 Programmes have a transparent and systemic process in place to ensure the professional development of faculty	Faculty have received training in education principles and have mentorship experience in teaching.
	Programmes have a policy and system in place that validates the updated academic and clinical/technical competency of faculty.
	Programmes have a system in place that provides faculty with opportunities for development in education, clinical/technical practice, and external professional activity.
	Programmes have a system and policy in place and provide time and resources for competency development for faculty.
Standard 14 Programmes demonstrate they have a transparent and systemic process in place for the admission and selection of students	Programmes have a policy and system in place to reward and recognise faculty in accordance with the requirements for promotion and/or tenure of the institution.
	Faculty demonstrate that they use professional development opportunities to enhance the programme or advance the knowledge base.
	Programmes have a transparent admission policy that specifies the process of student selection and the minimum acceptance criteria.
	Programmes have a transparent selection process, non-discriminatory admission policy, and actively seek to enrol students that represent the demographics of the setting (e.g., gender, culture, religion and persons with disabilities, etc).
Standard 14 Programmes demonstrate they have a transparent and systemic process in place for the admission and selection of students	Programmes have a system and policy in place that takes into account different entry points of students, the recognition of their prior learning, experience, and progression options toward higher educational goals.
	Programmes have entry requirements that meet national criteria for tertiary education institutions including, but not limited to, the completion of secondary education.

Education Standards	Evidence of compliance
Standard 15 Programmes demonstrate that the actual student type and intake aligns with the established values and policies	<p>Programmes admit students who demonstrate skills in the language of instruction and in dealing with persons with disabilities.</p> <p>Programmes admit students who have met admission criteria (See Evaluation Template for examples) and are expected to meet the requirements to complete the programme.</p> <p>Programmes seek to admit students who demonstrate a willingness to serve a range of user populations and contribute meaningfully to service delivery.</p> <p>Programmes provide appropriate accessibility to ensure that persons with a disability can be successful in the programme.</p> <p>Programmes ensure that diversity is present in the student body to represent the range of culture, gender, disabilities, religions, and other demographic factors present in their society.</p>

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Appendices

Appendix I - Sample of Curriculum Content

This list provides a sample for programmes to consider in curriculum development. However, curriculum content should be based on the demographics and epidemiology of the programme setting.

Core Prosthetic/Orthotic Theory and Practice

The theory and practice content of interventions listed below are normally integrated with the competencies/outcomes described in the ISPO evaluation documents. The curriculum should be appropriate and aligned with the need for services in the local setting.

Graduates should demonstrate an understanding of foundational knowledge and skills in prescription recommendation, prosthetic/orthotic design, biomechanical principles, fitting, evaluation, adjustment, user-specific outcomes, and material selection for the following:

I. Lower limb orthoses

- i. Footwear
 - a. Orthopaedic, diabetic and custom shoes
 - b. Shoe modifications
- ii. Foot orthoses (FO)
- iii. Supramalleolar orthoses (SMO)
- iv. Ankle-foot orthoses (AFO)
- v. Knee orthoses (KO)
- vi. Knee-ankle-foot orthoses (KAFO)
- vii. Hip orthoses (HO)
- viii. Hip-knee-ankle-foot orthoses (HKAFO)
- ix. Components and materials

II. Upper limb orthoses

- i. Finger orthoses (FO)
- ii. Hand orthoses (HO)
- iii. Wrist-hand orthoses (WHO)
- iv. Wrist-hand-finger orthoses (WHFO)
- v. Elbow orthoses (EO)
- vi. Elbow-wrist-hand orthoses (EWHO)
- vii. Shoulder orthoses (SO)
- viii. Shoulder-elbow-wrist-hand orthoses (SEWHO)
- ix. Components and materials

III. Spinal orthoses

- i. Cervical orthoses (CO)
- ii. Cervico-thoracic orthoses (CTO)
- iii. Cervico-thoraco-lumbo-sacral orthoses (CTLSO)
- iv. Thoraco-lumbo-sacral orthoses (TLSO)
- v. Lumbo-sacral orthoses (LSO)
- vi. Scoliosis-orthotic management
- vii. Components and materials

IV. Positioning/mobility devices

- i. Seating systems
- ii. Wheelchairs
- iii. Standing frames

V. Upper limb prostheses

- i. Socket designs for all amputation levels
- ii. Suspension methods and variants for upper limb prostheses
- iii. Control principles
- iv. Components and materials

VI. Lower limb prostheses

- i. Socket designs for all lower limb amputation levels
- ii. Suspension methods for lower limb prostheses

- iii. Post-operative prostheses
- iv. Volume control (shrinker or elastic wrap)
- v. Components and materials

Graduates of clinical programmes typically demonstrate entry-level knowledge of modular or prefabricated devices that may be used to optimise resources. This may include, but is not limited to soft goods, mobility aids, postural supports and other assistive products related to prosthetic/orthotic services.

Academic Subjects

Each programme shall determine whether components of the basic science curriculum are incorporated into the professional curriculum or are required prior to entry into the programme. The following subjects are typically included at the appropriate level to achieve the defined competencies for each classification:

VII. For academic subject programmes

- i. Life Sciences/biology
- ii. Chemistry
- iii. Physics
- iv. Human anatomy and physiology
- v. Kinesiology
- vi. Psychology/behavioural sciences
- vii. Applied technologies
- viii. Informational technology
- ix. Communication skills
- x. Ethics
- xi. Biomechanics
- xii. Materials science
- xiii. Mechanical principles
- xiv. National and/or international policy in disability
- xv. Models of disablement
- xvi. Practice management
- xvii. Professional issues
- xviii. Technical skills
- xix. Rehabilitation science

VIII. Clinical programmes

- i. Clinical pathology
- ii. Clinical pharmacology
- iii. Clinical skills
- iv. Diagnostic studies
- v. Evidence-based practice
- vi. Health care economics
- vii. Gait assessment and analysis
- viii. Neuroscience

IX. Programmes aimed at Prosthetist/Orthotist level clinical training

- i. Research methods
- ii. Statistics
- iii. Critical appraisal
- iv. Research or capstone project

Elective Content

Programmes are encouraged to include elective content that broadens the perspective of students, addresses advancements in technology or special considerations for their setting. Below are examples of common prosthetic/orthotic related content that may be included to enhance core curriculum.

X. Elective content

- i. Helmets
- ii. Microprocessor controls
- iii. Functional electrical stimulations
- iv. Additive manufacture/ 3D printing and other innovative techniques
- v. Fracture orthoses
- vi. Burn orthoses

Appendix II – Sample Code of Ethics

The code of ethics suggested in the Report of the United Nations Interregional Seminar on Standards for the Training of Prosthetists (22) is given as an example that satisfies the minimum requirements. This code of ethics may require elaboration in different cultural, ethnic, or religious settings.

Ethical code for the prosthetic/orthotic occupations

- i. He/she shall observe loyal relations with his/her colleagues and with other members of the clinic team without assuming roles outside his/her own profession.
- ii. He/she shall practice absolute discretion regarding personal matters or knowledge he/she might acquire in his/her professional work.
- iii. He/she, like all other members of the clinic team, should supply service only as a member of that team and respect its conclusions.
- iv. He/she shall collaborate freely in the necessary exchange of information between colleagues and others in the different but related disciplines.
- v. He/she shall strive to perform to the highest possible standard of his/her professional skill.
- vi. He/she shall provide services to users in a professional manner; personal, financial or commercial interests shall be secondary.
- vii. He/she shall always honestly represent himself/herself as well as his/her services to the patient and all others concerned.
- viii. He/she shall observe similar restrictions in his/her personal relations with users of prosthetic and orthotic services as are normally accepted by the medical profession.

Appendix III – Standard 1 Evidence of Compliance

Programmes prepare entry-level personnel to be competent practitioners in prosthetics and/or orthotics.

Evidence of Compliance	PO Technician	Associate PO	Professional PO
Apply knowledge of physical sciences, social sciences, health sciences, culture, and natural sciences to professional practice			
Exemplify the role of the prosthetic/orthotic professionals in providing ethical, user-centered care			
Social competence and cultural awareness			
Ability to view the contemporary world from both local and global perspectives			
Capacity to reflect critically on shared concerns and think of innovative, creative solutions guided by ethical standards			
Ability to contribute personally and meaningfully to the community's development			
Demonstrate proficiency in communication skills			
Express thoughts and ideas effectively and proficiently			
Demonstrate efficient and appropriate use of electronic media in producing documents			
Demonstrate accuracy in documentation			
Complement active listening and verbal communication with appropriate non-verbal signs			
Demonstrate effective and appropriate use of available technology in various communication			
Demonstrate the ability to document in accordance with professional standards in compliance with legal and funding requirements			
Demonstrate the ability to document in compliance with data protection, copyright, and privacy law			
Demonstrates the ability for clinical communications by effectively sharing and interacting with others across the continuum of care			
Participate in the development of practice management skills in various settings			
Apply the concepts of occupational safety and health in the prosthetic/orthotic services			
Demonstrates the ability to identify goals appropriate to their practice settings: academia, clinical setting, community, homecare, and/or industry			
Use resources to ensure attainment of identified goals to optimized the impact of services			
Demonstrates the ability to develop a plan within resources to ensure attainment of identified goals to optimized the impact of service			
Work effectively in an inter/intra-professional collaborative setting			
Understand the role of the prosthetic/orthotic occupations in the healthcare continuum			
Understand the role of other healthcare providers in the healthcare continuum			
Awareness of the roles of users and other stakeholders			
Demonstrate appropriate behaviour as a productive member of the team			
Demonstrate sensitivity and respect for the beliefs and values of others that may be different from one's own			
Communicate effectively through verbal, non-verbal, and written forms when dealing with other stakeholders			

Demonstrate social and professional responsibility and ethical behaviours in multi-cultural settings and scenarios			
Demonstrates an understanding of the ISPO Code of Ethics and/or an appropriate local Code of Ethics			
Provide equal opportunities to everyone regardless of gender, race, religion, political affiliation, economic status, educational background, and societal position			
Demonstrating an understanding of the importance of supporting informed decision-making and establishing informed consent			
Awareness and/or participation in national and/or international structures for health services governance			
Understanding and adhere to the principles of government and legislation			
Demonstrate competence in conducting appropriate examination, evaluation, and assessment of users across the individuals' lifespan and within a broad continuum of care			
Use sound clinical reasoning skills in examination, evaluation, and assessment of users			
Demonstrate the ability to participate in the inter/intra-disciplinary team			
Demonstrates the ability to accurately and completely document results of examination, evaluation, and assessment according to accepted standards			
Demonstrate the ability to communicate results of examination, evaluation, and assessment to users and other stakeholders			
Demonstrate the ability to document and communicate prosthetic/orthotic service plans to meet standards for reimbursement and regulations of external agencies			
Demonstrate the ability to determine the need for referral to appropriate qualified service providers before beginning treatment			
Demonstrate the ability to select relevant, valid, reliable, and sensitive measures of clinical status or health outcomes to screen and/or determine the condition of users			
Demonstrate the ability to formulate a treatment plan including outcome/s and follow up using evidence based practice			
Optimize the use of appropriate equipment, materials, components and techniques in prosthetic/orthotic services			
Demonstrate the ability to use materials, equipment, tools, and components safely			
Demonstrate an understanding of ISO standards or other quality management systems in selection of components or design of prosthetic/orthotic devices			
Apply mechanical principles to devices to match the needs of users, including safety, bench alignment, and durability needs			
Assess and adjust the operational quality, safety, and durability of the device to conform to prescription details			
Demonstrate the ability to achieve appropriate aesthetic results for the individual user			
Demonstrate the ability to select appropriate technology in various settings			
Demonstrates an understanding of the process of introducing new and/or innovative technologies			
Apply scientific principles in the use of materials and techniques			
Select appropriate cost effective materials, components and techniques relevant to the technical production process			
Select appropriate techniques for creating and modifying models of body segments			
Demonstrate competence in developing and implementing appropriate prosthetic/orthotic service plans for users across the individual's lifespan within a broad continuum of care			
Demonstrates an understanding of the process of formulation for prosthetic/orthotic service planning			
Demonstrate the ability to effectively implement the technical production of appropriate prosthetic/orthotic devices in the local setting			
Demonstrate the ability to evaluate the quality of technical aspects of the device			
Aptitude in solving problems systematically			
Demonstrate the ability to effectively create a model of the body segment			
Demonstrate the ability to appropriately fit the limb-device interface (including static alignment)			
Demonstrate the ability to effectively implement the dynamic fit and alignment of prosthetic/orthotic devices			

Demonstrate the ability to determine need for referral to appropriate qualified service providers as part of the continuum of care			
Aptitude in tackling problems scientifically using evidence based practice			
Identify and prioritize evidence-based solutions to problems that may arise during the implementation of the prosthetic/orthotic service plan			
Demonstrate the ability to effectively implement prosthetic/orthotic service plans to address complex case management			
Formulate specific, measurable, attainable, realistic, and time-bound goals for users			
Demonstrate the ability to implement and interpret appropriate outcome measures			
Demonstrate the ability to evaluate outcomes of prosthetic/orthotic service plans in terms of the fit, function, and cosmesis of the device, and adjust the plan as needed			
Demonstrate the ability to determine the need for continuance of treatment or discharge from treatment			
Demonstrate, in a systematic and effective manner, the ability to impart knowledge when providing education for users, their caregivers, other health professionals, and the public at large			
Demonstrate an understanding of the importance of educating users, their support networks and the public at large in relevant aspects of prosthetic/orthotic services			
Demonstrate the ability to provide effective education to users, their support networks and the public at large			
Demonstrate the ability to contribute to professional development by providing effective education to peers, and/or other healthcare providers			
Demonstrate an understanding of the importance of feedback in supporting learning for self and others			
Demonstrate appropriate competencies in research and evidence based practice			
Understand the role of prosthetic/orthotic occupations in the development and use of evidence			
Understand the research process and levels of evidence			
Conduct a comprehensive search of evidence in libraries, databases and other sources using identified keywords			
Identify relevant clinical practice questions based on a particular context			
Critically appraise research articles using appropriate criteria			
Utilize valid research findings in evidence-based practice to focus on extracting the practical and clinical implications of research findings			
Demonstrate basic skills in conducting research			
Choose an appropriate research design and methodology			
Develop an ethics-approved research protocol			
Select appropriate analysis methods/models for data collected			
Document results of data collection according to a prescribed format			
Apply ethical principles and good clinical practice in health research			
Exercise integrity in the conduct of research			
Draft a research report in its publishable format			
Actively engage in lifelong learning activities			
Develop skills that will allow for effective self-assessment of levels of competence for performance of tasks in various practice settings			
Develop skills to engage actively in self-directed learning strategies / opportunities			
Develop an awareness of the importance of engaging actively in formal and informal continuing professional education activities to remain up to date			



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