

Standards and Guidelines

for an Accredited Educational Program for the Orthotic and Prosthetic Technician and the Orthotic and Prosthetic Assistant

These standards were adopted in 2003 by the:

- American Academy of Orthotists and Prosthetists;
- American Board for Certification in Orthotics and Prosthetics Inc.; and
- National Commission on Orthotic and Prosthetic Education

The National Commission on Orthotic and Prosthetic Education (NCOPE) accredits programs based on review and compliance with these standards.

These are the minimum standards of quality used in accrediting programs that prepare individuals to enter the orthotic and prosthetic profession. The extent to which a program complies with these standards determines its accreditation status; therefore, these standards constitute the minimum requirements to which an accredited program is held accountable.

Standards are printed in regular typeface in outline form. *Guidelines* are printed in italic typeface in narrative form.

Section I and III are common to all educational programs accredited by NCOPE. Section II contains a description of the profession and the specific requirements for preparing Orthotic/Prosthetic technicians and assistants.

Preamble

Objective

The American Academy of Orthotists and Prosthetists, the American Board for Certification in Orthotics and Prosthetics, Inc. and the National Commission on Orthotic and Prosthetic Education cooperate to establish, maintain and promote appropriate standards of quality for educational programs in orthotics and prosthetics and to provide recognition for educational programs that meet or exceed the minimum standards outlined here. Lists of accredited programs are published for the information of students, employers, educational institutions and agencies, and the public.

These standards should be used to develop, evaluate and analyze orthotic and prosthetic programs. On-site review teams assist in evaluating a program's relative compliance with the accreditation standards.

Section I: General Requirements for Accreditation

A. Sponsorship

1. The sponsoring institution and affiliates must be accredited by recognized agencies or meet equivalent standards.
2. Sponsoring institutions must be authorized under applicable law or other acceptable laws or authority to provide a program of postsecondary education.
3. Accredited educational programs established in academic health centers or in colleges or universities with relevant hospital affiliations must meet comparable standards for education in orthotics and prosthetics.
4. The sponsoring institution must assume primary responsibility for: student admission; curriculum planning; selection of course content; coordination of classroom teaching and supervised clinical practice; appointment of faculty; receiving and processing applications for admission; and granting the certificate or degree documenting satisfactory completion of the educational program.

B. Resources

1. Personnel

a. Administrative Personnel

The program must have adequate leadership and management. These officials must possess the necessary qualifications to perform the functions identified in documented job descriptions.

(1) Program Director

(a) Responsibilities

The program director must be responsible for the day-to-day operation, coordination, supervision and evaluation of all aspects of the orthotic and prosthetic assistant or technician education programs.

Administrative and supervisory responsibilities of the program director should be recognized in terms of released time from other departmental assignments. The amount of released time should be consistent with departmental or institutional policy, but should be deemed appropriate in view of the administrative responsibilities of the program director.

(b) Qualifications or Equivalentents

The director must possess at least a bachelor's degree, demonstrate appropriate academic background and experience in the fields of orthotics and prosthetics and be certified by the American Board for Certification in Orthotics and Prosthetics, Inc. (ABC) or have otherwise acceptable qualifications.

The program director should have a minimum of five years of teaching, clinical and administrative experience in a field related to orthotics and prosthetics.

b. Faculty and/or Instructional Staff**(1) Responsibilities**

In each location where a student is assigned for didactic or supervised practice instruction, there must be a qualified individual designated to provide that supervision and related frequent assessments of the student's progress in achieving acceptable program requirements.

(2) Qualifications

(a) The instructors must be knowledgeable in course content and effective in teaching their assigned subjects.

(b) Each full-time instructor must be an ABC certifee or registrant in good standing in the discipline in which he or she teaches or possess the equivalent.

It is desirable that each full-time instructor have at least a bachelor's degree. The program should also include faculty who are physicians, physical and occupational therapists and specialists in the psychosocial areas.

(3) Number

There shall be sufficient faculty to provide students with adequate attention, instruction, and supervised practice to acquire the knowledge and competence needed for entry into the occupation.

c. Clerical and Support Staff

Adequate clerical and other support staff must be available.

d. Professional Development

Programs must encourage their staff and faculty members to pursue continuing professional growth to assure that they can fulfill their responsibilities.

2. Financial Resources

Resources to operate an educational program must be ensured to fulfill obligations to matriculating and enrolled students.

3. Physical Resources

a. Facilities

Adequate classrooms, laboratories, other facilities and administrative offices must be provided for students, program staff and faculty.

b. Equipment and Supplies

Appropriate and sufficient equipment, supplies and storage space must be provided for student use and for teaching the didactic and supervised clinical practice components of the curriculum. Instructional aids such as clinical specimens, documents and related materials, reference materials, equipment and demonstration aids must be provided when required by the types of learning experiences delineated for either the didactic or supervised technical education components of the curriculum.

c. Learning Resources

(1) Library

Students must have ready access in time and location to an adequate supply of current books, journals, periodicals and other reference materials related to the curriculum.

Resource materials may be housed in the university library or departmental library. Reference materials should also be available in the technical setting or in the program director's office.

(2) Instructional Aids

Adequate audiovisual and other appropriate instructional aids must be available for use by orthotic and prosthetic educational program personnel.

Computer hardware and software and audiovisual resources should be available in sufficient number and quality to enhance student learning.

C. Students

1. Admission Policies and Procedures

Admission of students, including advanced placement, must be made in accordance with clearly defined and published practices of the institution. Any specific academic and technical standards required for admission to the program must also be clearly defined, published and readily accessible to prospective students and the public.

Policies regarding advanced placement, transfer of credit and credit for experimental learning must be readily accessible to prospective students, as must be requirements for previous education or work experience.

2. Evaluation of Students

Criteria for successful completion of segments of the curriculum and for graduation must be given in advance to each student. Evaluation methods must include content related to the objectives and competencies described in the curriculum for both didactic and supervised technical education components. They must be employed frequently enough to provide students and program officials with timely indications of the students' progress and academic standing and to serve as a reliable indicator of the effectiveness of course design and instruction.

3. Health

Program officials must establish a procedure for determining that the health of applicants and students will permit them to meet the established written technical standards of the program. Students must be informed of and have access to the health care services provided to other students of the institution.

4. Guidance

Guidance must be available to assist students in understanding course content and in observing program policies and practices. Students must also be provided with counseling or referral for problems that may interfere with their progress through the program.

D. Off Campus Programs

1. Off Campus

To ensure that off-campus programs meet the same quality standards as those programs offered at the main campus, the parent program faculty must be continuously involved in and committed to that program. This involvement must be specified with respect to planning, teaching, advisement, admission and the other elements of the academic program.

The curriculum requirements, admission practices, student counseling and qualifications of faculty must be equivalent to those of the parent program.

Off-campus programs are defined as programs that are located a significant distance (at least 50 miles) from the main campus. Students in off-campus programs should have reasonable access to the collection of books and journals in prosthetics-orthotics, as well as other appropriate academic services.

E. Operational Policies

1. Fair Practices

- a. Announcements and advertising must accurately reflect the program offered.
- b. Student and faculty recruitment and student admission and faculty employment practices must be nondiscriminatory with respect to race, color, creed, sex, age, disabilities and national origin.
- c. Academic credit costs to the student must be accurately stated, published, and made known to all applicants.
- d. The program or sponsoring institution must have a defined and published policy and procedure for processing student and faculty grievances.
- e. Policies and processes for student withdrawal and for refunds of tuition and fees must be published and made known to all applicants.
- f. Policies and processes by which students may perform service work while enrolled in the program must be published and made known to all concerned in order to avoid practices in which students are substituted for regular staff. Students may not take the responsibility or the place of qualified staff. However, after demonstrating proficiency, students may be permitted to undertake certain defined activities with appropriate supervision and direction. Students may be employed in the field of study outside regular educational hours, provided the work does not interfere with regular academic responsibilities. The work must be noncompulsory, paid and subject to standard employee policies
- g. The health and safety of patients, students, and faculty associated with the educational activities of the students must be adequately safeguarded.
- h. A program admitting students on the basis of ability to benefit must publicize its objectives, assessment measures, and means of evaluating ability to benefit.

2. Student Records

Satisfactory records must be maintained for student admission, attendance and evaluation. Grades and credit for courses must be recorded on the student transcript and permanently maintained by the sponsoring institution in a safe and accessible location.

F. Program Evaluation

A continuing system for reviewing the effectiveness of the educational program, especially as measured by student achievement, must be in place, and timely self-study reports must be prepared to aid the staff, the sponsoring institution and the accrediting agencies in assessing program qualities and needs.

1. Outcomes

Programs must routinely secure sufficient qualitative and quantitative information regarding the program graduates to demonstrate an ongoing evaluation of outcomes consistent with the graduate competencies specified by the educational program.

The manner in which programs seek to comply with this criterion may vary. However, timely efforts should be made to document the data and analysis performed. These sources of data may include, but should not be limited to: surveys of graduates and employers on such matters as employment settings, type and scope of practice, salary, job satisfaction and adequacy of the educational program in addressing education and skills; interviews with program graduates and employers of graduates; and data on the evaluation of student performance on the national certification examination and other nationally recognized standardized tests.

2. Results of Ongoing Program Evaluation

The results of ongoing evaluation must be appropriately reflected in the curriculum and other dimensions of the program. In particular, the program must systematically use the information obtained in its evaluation to foster student achievement with respect to the certificate or degree offered.

Program evaluation should be a continuing systematic process that validates internal and external curriculum in consultation with employers, faculty, preceptors, students and graduates. Follow-up studies of their employment and national examination performance should also be conducted. Other dimensions of the program merit consideration as well, such as the admission criteria and process, the curriculum design and the purpose and productivity of the advisory committee, if applicable.

Section II: Requirements for Orthotic and Prosthetic Technician and Assistant

A. Description of the Profession

Orthotics and prosthetics are applied physical disciplines that address neuromuscular and structural skeletal problems in the human body with a treatment process that includes evaluation and transfer of forces using orthoses and prostheses to achieve optimum function, prevent further disability and provide cosmesis.

The orthotic and prosthetic assistant supports the ABC-certified practitioner by assisting in patient care. Under the guidance and supervision of the ABC-certified practitioner, assistants may perform orthotic and prosthetic procedures and related tasks in the management of patients, as well as fabrication, repairs and maintenance on devices to provide maximum fit, function and cosmesis.

The technician, under the guidance and supervision of the ABC-certified practitioner, fabricates, repairs and maintains devices known as orthoses and prostheses to provide maximum fit, function and cosmesis.

B. Curriculum

1. Description of the Program

a. Faculty and students must be provided with a clear written description of the program and its content, including learning goals, course objectives and competencies required for graduation.

The statement of goals and objectives should provide the basis for program planning, implementation and evaluation. It should be compatible with both the mission of the sponsoring institution(s) and the expectations of the profession as reflected in Section II A., Description of the Profession, and as described in the task section in ABC's Practice Analysis of the Disciplines of Orthotics and Prosthetics.

Tasks and competencies enumerated in the Practice Analysis represents important guidelines for curriculum design and development of individual course content. These competencies should be achieved within the framework of appropriately sequenced basic science and orthotic and prosthetic units, modules or courses of instruction.

2. Instruction Must Follow a Plan Which Documents:

a. Appropriate learning experiences and curriculum sequencing to develop the competencies necessary for graduation, including appropriate instructional materials, classroom presentations, discussions and demonstrations.

Length: The program must be of sufficient length to address content and competencies necessary to prepare an orthotic/prosthetic technician or assistant.

Program length should consist of a minimum of 30 credits per discipline, in a program whose length is measured in credit hours, or 900 clock hours per discipline, in a program whose length is measured in clock hours. Actual program length may vary depending on institutional policy or state laws or regulations. It shall be the program's responsibility to justify the length as conducive to the program's effectiveness. If the program awards an associate of arts degree (AA) the minimum structure of the curriculum should be based on the number of hours and units required by the institution. If the program results in a certificate of completion being awarded, the minimum structure of the curriculum shall be based on the professional component of the AA curriculum minus the general education classes required for the degree. All courses shall include curriculum content acceptable to NCOPE.

b. In actual clinical practice, there must be integration of knowledge, theory and application. To accomplish this, instruction must be presented through lectures and demonstrations. Individual fabrication projects must also be used.

3. Specific Curriculum:

Professional course content for both the assistant and technician must be at the appropriate level to support the entry-level tasks and competencies for each group as identified by the American Board for Certification's *Practice Analysis*. To do so, course content must include at least:

Orthotic/Prosthetic Technician

a. Specialized instruction in:

- (1) The use of tools and equipment, properties of materials, mechanics, technical drawing and basic musculoskeletal anatomy presented in a manner that relates to the orthotic/prosthetic technician.
- (2) Lectures, demonstrations and laboratory practice related to orthotic and prosthetic devices with emphasis on meeting design requirements.
- (3) Fabrication processes and laboratory methods pertinent to orthotic/prosthetic technique.

- (4) Fabrication and assembly of components and devices in the following categories:
- a. Lower-limb prosthetics – must include transtibial (below knee) and transfemoral (above knee) fabrication training.
 - b. Upper-limb prosthetics – must include transhumeral (above elbow), and transradial (below elbow) fabrication training that includes flexible and rigid hinges.
 - c. Lower-limb orthotics – must include fabrication training for foot orthosis/orthoses, UCBL, metal and plastic ankle-foot orthoses, knee-ankle-foot orthoses and hip-knee-ankle-foot orthoses.
 - d. Upper-limb orthotics – must include fabrication training for metal and/or plastic hand orthoses and wrist-hand orthoses.
 - e. Spinal orthotics – must include fabrication training for metal and/or plastic lumbo-sacral orthoses, thoraco-lumbo-sacral orthoses and anterior-posterior medial-lateral orthoses.
- (5) Technique for repair and adjustment of orthotic and prosthetic devices.

b. Students must successfully demonstrate knowledge in the following techniques and systems:

Prosthetics

Fabrication and static alignment of sockets related to various amputation levels, including partial foot, Symes, transtibial, transfemoral, .transradial, transhumeral and various joint disarticulations.

Orthotics

Fabrication and alignment of orthoses for lower limb, upper limb, and spine. Systems will include foot orthosis/orthoses, UCBL, ankle-foot orthosis/orthoses, knee-ankle-foot orthosis/orthoses, hip-knee-ankle-foot orthosis, wrist-hand orthosis/orthoses, thoraco-lumbo-sacral orthosis/orthoses and lumbo-sacral orthosis/orthoses.

c. Orthotic/Prosthetic Assistant

The orthotic/prosthetic assistant should perform the previously stated duties at a competent level and perform a level of patient care assistance. Students must be able to demonstrate their knowledge of theory and practice in clinical areas. This shall be accomplished through written and/or oral examinations and supervised fittings of patients or patient models representing the primary areas of disability: upper, lower and spinal.

The additional professional course content appropriate for the assistant will include at least:

Communication skills

Human anatomy and physiology

General pathology

Patient care techniques

Medical terminology

Medical documentation

Impression-taking techniques

d. Clearly written course syllabi must describe learning objectives and competencies to be achieved for both didactic and supervised technical education components.

e. Frequent, documented evaluation of students must assess their acquisition of knowledge, problem-identification and problem-solving skills and psychomotor, behavioral and technical competencies.

Section III: Maintaining and Administering Accreditation

A. Program and Sponsoring Institution Responsibilities

1. Applying for Accreditation

The accreditation review process conducted by NCOPE can be initiated only at the written request of the chief executive officer, an officially designated representative of the chief executive officer or an officially designated representative of the sponsoring institution.

This process is initiated by requesting an application form from and returning it to the:

National Commission on Orthotic and Prosthetic Education (NCOPE)

330 John Carlyle St.

Suite 200

Alexandria, VA 22314

2. Administrative Requirements for Maintaining Accreditation

To maintain accreditation, the following actions are required:

- a. The program must submit a Self-Study Report or a required progress report within a reasonable period of time as determined by NCOPE.
- b. The program must agree to a reasonable site visit date before the end of the period for which accreditation was awarded.
- c. The program must inform NCOPE within a reasonable period of time of changes in required program personnel.
- d. The sponsoring institution must inform NCOPE of its intent to transfer program sponsorship, in accord with NCOPE policy.
- e. The program and the sponsoring institution must pay NCOPE fees within a reasonable amount of time, as determined by NCOPE.
- f. The sponsoring institution must promptly inform NCOPE of any adverse decision affecting its accreditation or other specialty recognition status.

Failure to meet these administrative requirements for maintaining accreditation may lead to being placed on probation and ultimately to having accreditation withdrawn.

3. Voluntary Withdrawal

An institution sponsoring a program may voluntarily withdraw from NCOPE at any time.

B. NCOPE Responsibilities

1. Administering the Accreditation Review Process

- a. At the written request of the chief executive officer or other officially designated representative, NCOPE will assess an applicant's program relative to compliance with the standards.

The accreditation review process includes an on-site evaluation of the program. If the performance of a site visit team is unacceptable, the institution may request a second site visit.

Before an NCOPE accreditation decision, the sponsoring institution is given an opportunity to comment in writing on the report of the site team and to correct factual errors.

- b. Before moving forward with probationary accreditation, NCOPE provides the sponsoring institution with an opportunity to request reconsideration. Reconsideration is based on conditions existing when NCOPE arrived at its decision and on subsequent documented evidence of corrected deficiencies provided by the applicant.
- c. NCOPE awards of probationary accreditation are final and are not subject to appeal.

2. Withholding or Withdrawing Accreditation

a. Before deciding that accreditation be withheld or withdrawn, NCOPE provides the sponsoring institution with an opportunity to request reconsideration. NCOPE decisions to withhold or withdraw accreditation may be appealed. A copy of NCOPE's appeals procedures for withholding or withdrawing accreditation is enclosed with the letter notifying the sponsoring institution of one of these actions. When accreditation is withheld or withdrawn, the sponsoring institution's chief executive officer is provided with a clear statement of each deficiency and is informed that the institution may re-apply for accreditation whenever the program is believed to be in compliance with the standards.

b. All students who have successfully completed a program granted any accreditation status at any point during their enrollment are regarded as graduates of an NCOPE-accredited program.

3. Inactive Programs

a. The sponsoring institution may request inactive status for a program that does not enroll students for up to two years. The program and its sponsoring institution must continue to pay required annual fees.

b. Should a program be inactive for two years and not be reactivated, it will be considered discontinued and accreditation will be withdrawn.

Note: These standards were accurate as of the time of publication. They are frequently reviewed and revised; for the most recent version, contact the applicable accrediting agency.

Entry-Level Competencies/Task for the Orthotic and Prosthetic Technician and Assistant as Presented in ABC's *Practice Analysis*

***Additional task/competencies for assistant level curriculum**

Domain: Formulation of the Treatment Plan

1. Identify material, design and components to support anticipated outcome.
2. Document treatment plan using established record-keeping techniques to verify patient care.*

Domain: Implementation of the Treatment Plan

3. Inform patient, family, and/or caregiver of the orthotic/prosthetic procedure, possible risks and time involved in the procedure.*
4. Select appropriate material/techniques in order to implement treatment plan.
5. Provide patient with preparatory care for orthotic/prosthetic treatment (e.g., diagnostic splint, stump shrinker).*
6. Provide Prepare patient for procedure required to initiate treatment plan (e.g., take impression, digitize, delineate, scan).*
7. Implement procedure (e.g., take impression, digitize, delineate, scan).*
8. Select appropriate materials, components and specifications for orthosis/prosthesis based on patient criteria to ensure optimum strength, durability and function as required (e.g., choose ankle or knee joints, feet, knee joints, feet, knee units; choose material of components, lamination layups).
9. Consult technical component/material resources as required.
10. Prepare delineation/impression/template for modification/fabrication (e.g., prepare impression/reverse delineation, seal and fill impression/pour cast, digitize, strip model, download shape to carver or modification software).

11. Modify and prepare patient model for fabrication.
12. Fabricate/assemble prescribed device by assembling selected materials/ components in order to prepare for fitting and/or delivery (e.g., laminate/vacuum-form, remove socket/orthosis from model, smooth and finish orthosis/prosthesis, contour side bars, bench align components to socket, strap orthosis/prosthesis as necessary, perform final assembly of orthosis/prosthesis for patient fitting/delivery).
13. Assess device for structural safety and ensure that manufacturers' guidelines have been followed prior to patient fitting/delivery (e.g., torque values, patient weight limits).
14. Ensure that materials, design and components are fit/delivered as prescribed.*
15. Complete fabrication process after achieving optimal fit of orthosis/prosthesis (e.g., convert test socket to definitive orthosis/prosthesis).
16. Educate/counsel patient and/or caregiver about the use and maintenance of the orthosis/prosthesis (e.g., wearing schedules, therapy, other instructions).*
17. Reassess orthosis/prosthesis for structural safety prior to patient delivery (e.g., screws tightened, cover attached).
18. Document treatment using established record keeping techniques to verify implementation of treatment plan.*

Domain: Follow-up Treatment Plan

19. Assess modified device for structural safety and ensure that manufacturers' guidelines (e.g., torque values, patient weight limits) have been followed.

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