



Commission on Accreditation of Allied Health Education Programs

Standards and Guidelines for the Accreditation of Educational Programs in Orthotic and Prosthetic Technician

Standards initially adopted in 2011

Adopted by the
American Academy of Orthotists and Prosthetists, American Board for Certification in Orthotics, Prosthetics and Pedorthics, National Commission on Orthotic and Prosthetic Education and CAAHEP

The Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredits programs upon the recommendation of the National Commission on Orthotic and Prosthetic Education.

These accreditation **Standards and Guidelines** are the minimum standards of quality used in accrediting programs that prepare individuals to enter the orthotic and prosthetic profession. Standards are the minimum requirements to which an accredited program is held accountable. Guidelines are descriptions, examples, or recommendations that elaborate on the Standards. Guidelines are not required, but can assist with interpretation of the Standards.

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

Preamble

The Commission on Accreditation of Allied Health Education Programs (CAAHEP), National Commission on Orthotic and Prosthetic Education, American Academy of Orthotists and Prosthetists, and American Board for Certification in Orthotics, Prosthetics and Pedorthics 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 in these accreditation **Standards and Guidelines**. Lists of accredited programs are published for the information of students, employers, educational institutions and agencies, and the public.

These **Standards and Guidelines** are to be used for the development, evaluation, and self-analysis of orthotic and prosthetic programs. On-site review teams assist in the evaluation of a program's relative compliance with the accreditation Standards.

Description of the Profession

Technicians support the credentialed orthotists/prosthetist and other credentialed practitioners by providing the technical implementation tasks and services associated with the support of patient care. The technician fabricates repairs and maintains devices to provide maximum fit, function and cosmesis under appropriate consultation and supervision with the credentialed orthotists/prosthetists and other credentialed practitioners.

I. Sponsorship

A. Sponsoring Educational Institution

A sponsoring institution must be a post-secondary academic institution accredited by an institutional accrediting agency that is recognized by the U.S. Department of Education, and must be authorized under applicable law or other acceptable authority to provide a post-secondary program, which awards a minimum of a certificate at the completion of the program.

B. Consortium Sponsor

1. A consortium sponsor is an entity consisting of two or more members that exists for the purpose of operating an educational program. In such instances, at least one of the members of the consortium must meet the requirements of a sponsoring educational institution as described in I.A.
2. The responsibilities of each member of the consortium must be clearly documented in a formal affiliation agreement or memorandum of understanding, which includes governance and lines of authority.

C. Responsibilities of Sponsor

The Sponsor must ensure that the provisions of these **Standards and Guidelines** are met.

II. Program Goals

A. Program Goals and Outcomes

There must be a written statement of the program's goals and learning domains consistent with and responsive to the demonstrated needs and expectations of the various communities of interest served by the educational program. The communities of interest that are served by the program must include, but are not limited to, students, graduates, faculty, sponsor administration, employers, and the public.

Program-specific statements of goals and learning domains provide the basis for program planning, implementation, and evaluation. Such goals and learning domains must be compatible with the mission of the sponsoring institution(s), the expectations of the communities of interest, and nationally accepted standards of roles and functions. Goals and learning domains are based upon the substantiated needs of health care providers and employers, and the educational needs of the students served by the educational program.

B. Appropriateness of Goals and Learning Domains

The program must regularly assess its goals and learning domains. Program personnel must identify and respond to changes in the needs and/or expectations of its communities of interest.

An advisory committee, which is representative of at least each of the communities of interest named in these **Standards**, must be designated and charged with the responsibility of meeting at least annually, to assist program and sponsor personnel in formulating and periodically revising appropriate goals and learning domains, monitoring needs and expectations, and ensuring program responsiveness to change.

C. Minimum Expectations

The program must have the following goal defining minimum expectations:

- "To prepare competent entry-level orthotic and/or prosthetic technicians in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains."

Programs adopting educational goals beyond entry-level competence must clearly delineate this intent and provide evidence that all students have achieved the basic competencies prior to entry into the field.

Nothing in this Standard restricts programs from formulating goals beyond entry-level competence.

III. Resources

A. Type and Amount

Program resources must be sufficient to ensure the achievement of the program's goals and outcomes. Resources must include, but are not limited to: faculty; clerical and support staff; curriculum; finances; offices; classroom, laboratory, and, ancillary student facilities; clinical affiliates; equipment; supplies; computer resources; instructional reference materials, and faculty/staff continuing education.

B. Personnel

The sponsor must appoint sufficient faculty and staff with the necessary qualifications to perform the functions identified in documented job descriptions and to achieve the program's stated goals and outcomes.

1. Program Director

a. Responsibilities

The Program Director must be responsible for all aspects of the program, including the organization, administration, continuous review, planning, development, and general effectiveness of the program.

The Program Director should pursue ongoing formal training designed to maintain and upgrade his/her professional, instructional and administrative capabilities.

b. Qualifications

The Program Director must:

- (1) Possess a minimum of a bachelors degree;
- (2) Be credentialed in the profession of Orthotics and/or Prosthetics by a national credentialing organization that is accredited by the National Commission for Certifying Agencies (NCCA) or hold a professional license as is required by the state in which he/she is employed;
- (3) Have a minimum of five years of teaching, clinical and administrative experience in a profession related to orthotics and prosthetics.

The program director should possess an advanced degree.

2. Faculty and/or Instructional Staff

a. Responsibilities

In classrooms, laboratories, and each location where students are assigned for didactic or clinical instruction or supervised practice, there must be (a) qualified individual(s) designated to provide instruction, supervision, and timely assessments of the students' progress in achieving program requirements.

b. Qualifications

Faculty and/or Instructional Staff must:

- (1) Possess a minimum of an associates degree;
- (2) Be appropriately credentialed or licensed for the content/subject area being taught through professional preparation and experience in their respective academic areas.

C. Curriculum

The curriculum must ensure the achievement of program goals and learning domains. Instruction must be an appropriate sequence of classroom, laboratory, and practicum activities. Instruction must be based on clearly written course syllabi that include course description, course objectives, methods of evaluation, topic outline, and competencies required for graduation.

The program must demonstrate that the curriculum meets or exceeds the content of the latest edition of the *Core Curriculum for Orthotic/Prosthetic Technician*. See Appendix B.

D. Resource Assessment

The program must, at least annually, assess the appropriateness and effectiveness of the resources described in these **Standards**. The results of resource assessment must be the basis for ongoing planning and appropriate change. An action plan must be developed when deficiencies are identified in the program resources. Implementation of the action plan must be documented and results measured by ongoing resource assessment.

IV. Student and Graduate Evaluation/Assessment

A. Student Evaluation

1. Frequency and purpose

Evaluation of students must be conducted on a recurrent basis and with sufficient frequency to provide both the students and program faculty with valid and timely indications of the students' progress toward and achievement of the competencies and learning domains stated in the curriculum.

2. Documentation

Records of student evaluations must be maintained in sufficient detail to document learning progress and achievements.

B. Outcomes

1. Outcomes Assessment

The program must periodically assess its effectiveness in achieving its stated goals and learning domains. The results of this evaluation must be reflected in the review and timely revision of the program.

Outcomes assessments must include, but are not limited to: national credentialing examination(s) performance, programmatic retention/attrition, graduate satisfaction, employer satisfaction, job (positive) placement, and programmatic summative measures. The program must meet the outcomes assessment thresholds.

"Positive placement" means that the graduate is employed full or part-time in a related field; and/or continuing his/her education; and/ or serving in the military.

2. Outcomes Reporting

The program must periodically submit to the NCOPE the program goal(s), learning domains, evaluation systems (including type, cut score, and appropriateness), outcomes, its analysis of the outcomes, and an appropriate action plan based on the analysis.

Programs not meeting the established thresholds must begin a dialogue with the NCOPE to develop an appropriate plan of action to respond to the identified shortcomings.

V. Fair Practices

A. Publications and Disclosure

1. Announcements, catalogs, publications, and advertising must accurately reflect the program offered.
2. At least the following must be made known to all applicants and students: the sponsor's institutional and programmatic accreditation status as well as the name, mailing address, web site address, and phone number of the accrediting agencies; admissions policies and practices, including technical standards when used; policies on advanced placement, transfer of credits, and credits for experiential learning; number of credits required for completion of the program; tuition/fees and other costs required to complete the program; policies and processes for withdrawal and for refunds of tuition/fees.
3. At least the following must be made known to all students: academic calendar, student grievance procedure, criteria for successful completion of each segment of the curriculum and for graduation,

and policies and processes by which students may perform practicum work while enrolled in the program.

4. The sponsor must maintain, and provide upon request, current and consistent information about student/graduate achievement that includes the results of one or more of the outcomes assessments required in these **Standards**.

The sponsor should develop a suitable means of communicating to the communities of interest the achievement of students/graduates.

B. Lawful and Non-discriminatory Practices

All activities associated with the program, including student and faculty recruitment, student admission, and faculty employment practices, must be non-discriminatory and in accord with federal and state statutes, rules, and regulations. There must be a faculty grievance procedure made known to all paid faculty.

C. Safeguards

The health and safety of patients, students, and faculty associated with the educational activities of the students must be adequately safeguarded.

All activities required in the program must be educational and students must not be substituted for staff.

D. Student Records

Satisfactory records must be maintained for student admission, advisement, counseling, and evaluation. Grades and credits for courses must be recorded on the student transcript and permanently maintained by the sponsor in a safe and accessible location.

E. Substantive Change

The sponsor must report substantive change(s) as described in Appendix A to CAAHEP/NCOPE in a timely manner. Additional substantive changes to be reported to NCOPE within the time limits prescribed include:

1. Changes to the institution's mission or objectives if these will affect the program
2. The institution's legal status or form of control
3. The addition or deletion of courses that represent a change in content or in method of delivery
4. The degree or credential level
5. Clock hours to credit hours or vice versa; an increase or decrease in clock or credit hours for successful completion of a program or in the length of a program

F. Agreements

There must be a formal affiliation agreement or memorandum of understanding between the sponsor and all other entities that participate in the education of the students describing the relationship, roles, and responsibilities of the sponsor and that entity.

The signed affiliation agreement or memorandum of understanding should be regularly reviewed and, if necessary, updated. The time period of the agreement should span no more than two years at a time. At the time for renewal, the agreement should be reviewed by both parties and new signatures should be obtained.

APPENDIX A

(This Appendix will be added by CAAHEP after final approval of the **Standards and Guidelines** document.)

Application, Maintenance and Administration of Accreditation

A. Program and Sponsor Responsibilities

1. Applying for Initial Accreditation

- a. The chief executive officer or an officially designated representative of the sponsor completes a "Request for Accreditation Services" form and returns it electronically or by mail to:

NCOPE
330 John Carlyle St., Ste. 200
Alexandria, VA 22314

The "Request for Accreditation Services" form can be obtained from the CAAHEP website at www.caahep.org/Content.aspx?ID=11.

Note: There is **no** CAAHEP fee when applying for accreditation services; however, individual committees on accreditation may have an application fee.

- b. The program undergoes a comprehensive review, which includes a written self-study report and an on-site review.

The self-study instructions and report form are available from the NCOPE]. The on-site review will be scheduled in cooperation with the program and NCOPE once the self-study report has been completed, submitted, and accepted by the NCOPE

2. Applying for Continuing Accreditation

- a. Upon written notice from the NCOPE, the chief executive officer or an officially designated representative of the sponsor completes a "Request for Accreditation Services" form, and returns it electronically or by mail to:

NCOPE
330 John Carlyle St., Ste. 200
Alexandria, VA 22314

The "Request for Accreditation Services" form can be obtained from the CAAHEP website at www.caahep.org/Content.aspx?ID=11.

- b. The program may undergo a comprehensive review in accordance with the policies and procedures of the NCOPE.

If it is determined that there were significant concerns with the conduct of the on-site review, the sponsor may request a second site visit with a different team.

After the on-site review team submits a report of its findings, the sponsor is provided the opportunity to comment in writing and to correct factual errors prior to the NCOPE forwarding a recommendation to CAAHEP.

3. Administrative Requirements for Maintaining Accreditation

- a. The program must inform the NCOPE and CAAHEP within a reasonable period of time (as defined by the committee on accreditation and CAAHEP policies) of changes in chief executive officer, dean of health professions or equivalent position, and required program personnel (Refer to Standard III.B.).

- b. The sponsor must inform CAAHEP and the NCOPE of its intent to transfer program sponsorship. To begin the process for a Transfer of Sponsorship, the current sponsor must submit a letter (signed by the CEO or designated individual) to CAAHEP and the NCOPE that it is relinquishing its sponsorship of the program. Additionally, the new sponsor must submit a "Request for Transfer of Sponsorship Services" form. The NCOPE has the discretion of requesting a new self-study report with or without an on-site review. Applying for a transfer of sponsorship does not guarantee that the transfer of accreditation will be granted.
- c. The sponsor must promptly inform CAAHEP and the NCOPE of any adverse decision affecting its accreditation by recognized institutional accrediting agencies and/or state agencies (or their equivalent).
- d. Comprehensive reviews are scheduled by the NCOPE in accordance with its policies and procedures. The time between comprehensive reviews is determined by the NCOPE and based on the program's on-going compliance with the Standards, however, all programs must undergo a comprehensive review at least once every ten years.
- e. The program and the sponsor must pay NCOPE and CAAHEP fees within a reasonable period of time, as determined by the NCOPE and CAAHEP respectively.
- f. The sponsor must file all reports in a timely manner (self-study report, progress reports, probation reports, annual reports, etc.) in accordance with NCOPE policy.
- g. The sponsor must agree to a reasonable on-site review date that provides sufficient time for CAAHEP to act on a NCOPE accreditation recommendation prior to the "next comprehensive review" period, which was designated by CAAHEP at the time of its last accreditation action, or a reasonable date otherwise designated by the NCOPE.

Failure to meet any of the aforementioned administrative requirements may lead to administrative probation and ultimately to the withdrawal of accreditation. CAAHEP will immediately rescind administrative probation once all administrative deficiencies have been rectified.

4. Voluntary Withdrawal of a CAAHEP- Accredited Program

Notification of voluntary withdrawal of accreditation from CAAHEP must be made by the Chief Executive Officer or an officially designated representative of the sponsor by writing to CAAHEP indicating: the desired effective date of the voluntary withdrawal, and the location where all records will be kept for students who have completed the program.

5. Requesting Inactive Status of a CAAHEP- Accredited Program

Inactive status for any accredited program other than one holding Initial Accreditation may be requested from CAAHEP at any time by the Chief Executive Officer or an officially designated representative of the sponsor writing to CAAHEP indicating the desired date to become inactive. No students can be enrolled or matriculated in the program at any time during the time period in which the program is on inactive status. The maximum period for inactive status is two years. The sponsor must continue to pay all required fees to the NCOPE and CAAHEP to maintain its accreditation status.

To reactivate the program the Chief Executive Officer or an officially designated representative of the sponsor must provide notice of its intent to do so in writing to both CAAHEP and the NCOPE. The sponsor will be notified by the NCOPE of additional requirements, if any, that must be met to restore active status.

If the sponsor has not notified CAAHEP of its intent to re-activate a program by the end of the two-year period, CAAHEP will consider this a "Voluntary Withdrawal of Accreditation."

B. CAAHEP and Committee on Accreditation Responsibilities – Accreditation Recommendation Process

1. After a program has had the opportunity to comment in writing and to correct factual errors on the on-site review report, the NCOPE forwards a status of public recognition recommendation to the CAAHEP Board of Directors. The recommendation may be for any of the following statuses: initial accreditation, continuing accreditation, transfer of sponsorship, probationary accreditation, withhold of accreditation, or withdrawal of accreditation.

The decision of the CAAHEP Board of Directors is provided in writing to the sponsor immediately following the CAAHEP meeting at which the program was reviewed and voted upon.

2. Before the NCOPE allows the Initial Accreditation of a program to expire, the sponsor must have the opportunity to request reconsideration of that decision or to request voluntary withdrawal of accreditation. The NCOPE's decision is final and CAAHEP will not entertain any appeal on behalf of the program. CAAHEP will notify the sponsor in writing of the NCOPE's] decision.
3. Before the [committee on accreditation] forwards a recommendation to CAAHEP that a program be placed on probationary accreditation, the sponsor must have the opportunity to request reconsideration of that recommendation or to request voluntary withdrawal of accreditation. The NCOPE's reconsideration of a recommendation for probationary accreditation must be based on conditions existing both when the committee arrived at its recommendation as well as on subsequent documented evidence of corrected deficiencies provided by the sponsor.

The CAAHEP Board of Directors' decision to confer probationary accreditation is not subject to appeal.

4. Before the NCOPE forwards a recommendation to CAAHEP that a program's accreditation be withdrawn or that accreditation be withheld, the sponsor must have the opportunity to request reconsideration of the recommendation, or to request voluntary withdrawal of accreditation or withdrawal of the accreditation application, whichever is applicable. The NCOPE's reconsideration of a recommendation of withdraw or withhold accreditation must be based on conditions existing both when the NCOPE arrived at its recommendation as well as on subsequent documented evidence of corrected deficiencies provided by the sponsor.

The CAAHEP Board of Directors' decision to withdraw or withhold accreditation may be appealed. A copy of the CAAHEP "Appeal of Adverse Accreditation Actions" is enclosed with the CAAHEP letter notifying the sponsor of either of these actions.

At the completion of due process, when accreditation is withheld or withdrawn, the sponsor's Chief Executive Officer is provided with a statement of each deficiency. Programs are eligible to re-apply for accreditation once the sponsor believes that the program is in compliance with the accreditation Standards.

Note: Any student who completes a program that was accredited by CAAHEP at any time during his/her matriculation is deemed by CAAHEP to be a graduate of a CAAHEP-accredited program.

APPENDIX B

(If Standard III.C refers to a companion curriculum document, then it will be added by CAAHEP to this Appendix after final approval of the **Standards and Guidelines** document.)

O&P Technician Curriculum

Section A: Entry-level Competencies

The graduate entering the profession must effectively demonstrate competence in the following constructs.

- A.1.1 Understand and explain the role of the orthotic and prosthetic technician in providing ethical patient-centered care by applying the American Board for Certification in Orthotics, Prosthetics and Pedorthics Code of Professional Responsibilities in technical support of patients.
- A.1.2 Practice sound judgment in regard to safety of self and others, and adhere to safety procedures throughout the delivery of orthotic and/or prosthetic services.
- A.1.3 Demonstrate the knowledge and skills necessary to fabricate, adjust and maintain orthotic and prosthetic devices that are both appropriate (based on the prescription and/or instructions provided by practitioner or employer) and structurally sound for patient use.

Section B: General Curriculum – Basic Sciences

The following content related to orthotics and prosthetics must be included in the curriculum:

- a. Human anatomy
- b. Biomechanics/Kinesiology
- c. Material science

Section C: Professional Orthotic and Prosthetic Technical Content Areas

The program must facilitate the development of the performance criteria listed below. The student will be able to demonstrate knowledge and/or skill in the following content areas:

(Note: See end of Section C for a definition/hierarchy of modifications)

C.1.0 LOWER EXTREMITY ORTHOSES

C.1.1 Foot Orthoses

- a. Demonstrate knowledge of current materials used in the fabrication of hard and soft foot orthoses.
- b. Understand the difference between corrective and accommodative foot orthoses.
- c. Demonstrate knowledge and skill to prepare positive models for foot orthoses (category I and II modifications only*).
- d. Demonstrate skill to form materials to fabricate hard and soft orthoses.

- e. Demonstrate knowledge and skill of modifications of foot orthoses.
- f. Demonstrate knowledge and skill to correctly fit foot orthoses into shoes including corrections for heel height.
- g. Demonstrate knowledge of shoe modification.

C.1.2 UCBL Foot Orthoses

- a. Demonstrate knowledge of the bony landmarks and pressure tolerant areas of the foot.
- b. Demonstrate knowledge to locate the medial, lateral, and transverse arches of the foot.
- c. Demonstrate knowledge and skill to prepare a positive UCBL model for fabrication (category I and II modifications only*).
- d. Demonstrate knowledge of materials used to fabricate UCBL orthoses.
- e. Demonstrate knowledge and skill in the processes used to fabricate UCBL orthoses including medial posting and trim lines.

C.1.3 Ankle-Foot Orthoses

- a. Demonstrate knowledge of the following AFO designs:
 - 1. Posterior leaf spring/flexible ankle
 - 2. Plastic solid ankle
 - 3. Axial resisting
 - 4. CROW/neuropathic walker
 - 5. Metal designs
 - 6. Articulated with:
 - a. Dorsiflexion assist
 - b. Dorsiflexion stop
 - c. Plantarflexion resist
 - d. Plantarflexion stop
 - e. Limited motion
 - 7. Hybrid
 - 8. Padded anterior shell
 - 9. Molded inner boot
- b. Demonstrate the skills to fabricate:
 - 1. Plastic AFO
 - 2. Metal AFO with attached shoe
 - 3. Articulated plastic AFO with self-aligning joints (Tamarack)
 - 5. Articulated plastic AFO without self-aligning joints (Oklahoma)
 - 6. Heel posts
 - 7. Various strapping configurations
 - 8. Plastic AFO with modifications for varus and/or valgus ankle control
- c. Demonstrate knowledge of components for various AFOs.
- d. Demonstrate the knowledge and skills to correct a paper tracing to accommodate fixed or flexible deformities of the ankle.
- e. Demonstrate knowledge and skill in making angular changes to a negative model in the sagittal plane, only under a practitioner's instruction (i.e set ankle at 3 degrees of dorsiflexion).

- f. Demonstrate knowledge and skill to prepare positive models for fabrication of AFOs (category I and II modifications only*).

C.1.4 Knee-Ankle-Foot Orthoses

- a. Demonstrate knowledge of the following KAFO designs:
 - 1. Metal designs
 - 2. Plastic
 - 3. Hybrid
 - 4. Stance control
 - 5. Axial resisting
 - 6. Fracture
- b. Demonstrate skill to fabricate:
 - 1. Metal KAFO
 - 2. Plastic/metal (Hybrid) KAFO
- c. Demonstrate knowledge of components for coronal, sagittal and transverse plane control.
- d. Demonstrate the knowledge and skills to correct a lower limb tracing for a KAFO.
- e. Demonstrate knowledge and skill in making angular changes to a negative model in the sagittal plane, only under a practitioner's instruction (i.e set knee in 3 degrees of flexion).
- f. Demonstrate skill to prepare a lower limb positive model for fabrication of a KAFO (category I and II modifications only*).
- g. Demonstrate skill to incorporate tibial torsion into a metal KAFO.

C.1.5 Hip-Knee-Ankle-Foot Orthoses, Standing Frames/Parapodiums

- a. Demonstrate knowledge of the following HKAFO and standing frame designs:
 - 1. Standing frames and parapodiums
 - 2. Reciprocating gait orthoses
 - 3. Metal designs
 - 4. Plastic designs
- b. Demonstrate knowledge of components for various HKAFO designs.
- c. Demonstrate knowledge of hip joint placement.
- d. Demonstrate knowledge of tracing correction principles for fabrication of HKAFOs.
- e. Demonstrate knowledge of spinal control devices that may be incorporated in HKAFO designs.

C.1.6 Knee Orthoses

- a. Demonstrate knowledge of custom and prefabricated KO designs and principles.

C.1.7 Hip Orthoses

- a. Demonstrate knowledge of the following orthoses:
 - 1. Pediatric hip control orthoses
 - 2. Post-surgical/trauma hip control orthoses

C.2.0 UPPER EXTREMITY ORTHOSES

C.2.1 Hand Orthoses and Wrist-Hand Orthoses

- a. Demonstrate knowledge and skill to fabricate plastic and/or metal hand orthosis and wrist-hand orthoses.
- b. Demonstrate knowledge and skill to prepare positive models (category I and II modifications only*).

C.2.2 Elbow Orthoses and Shoulder-Elbow-Wrist-Hand Orthoses

- a. Demonstrate knowledge in the following:
 1. Elbow orthoses
 2. SEWH orthoses

C.2.3 Fracture Orthoses

- a. Demonstrate knowledge of various upper extremity orthoses for fracture management.

C.3.0 SPINAL ORTHOSES

C.3.1 Lumbo-Sacral and Thoraco-Lumbo-Sacral Orthoses

- a. Demonstrate knowledge of metal and plastic LSO and TLSO designs.
- b. Demonstrate skills to fabricate the following spinal orthoses:
 1. Metal design LSO or TLSO
 2. Plastic Bi-valve TLSO or LSO
 3. Scoliosis TLSO
- c. Demonstrate knowledge and skill to prepare positive models for spinal orthoses (category I and II modifications only*).

C.3.2 Cervico-Thoraco-Lumbo-Sacral Orthoses

- a. Demonstrate knowledge of metal and plastic CTLSO designs and principles.

C.4.0 COMPUTER AIDED DESIGN/COMPUTER AIDED MANUFACTURING

- a. Demonstrate knowledge of CAD/CAM concepts for orthotic applications.

C.5.0 LOWER EXTREMITY PROSTHETICS

C.5.1 Partial Foot Prostheses

- a. Demonstrate knowledge of designs and principles for partial foot prostheses.
- b. Demonstrate knowledge of current materials used in the fabrication of partial foot prostheses.
- c. Demonstrate skill to form materials to fabricate partial foot prostheses.
- d. Demonstrate knowledge and skill to prepare positive models for partial foot prostheses (category I modifications only*).

C.5.2 Syme Prostheses

- a. Demonstrate knowledge of designs for Syme prostheses.
- b. Demonstrate the skills to fabricate expandable wall and/or medial opening prostheses.
- c. Demonstrate knowledge and skill to prepare positive models for Syme prostheses (category I modifications only*).
- d. Demonstrate knowledge of alignment for Syme prostheses.

C.5.3 Transtibial Prostheses

- a. Demonstrate knowledge of the following transtibial socket designs and suspensions systems:
 1. Patellar tendon-bearing with cuff suspension
 2. Total surface bearing
 3. Hydrostatic using locking mechanism
 4. Roll-on suction
 5. Waist belt
 6. Supracondylar
 7. Knee joint and thigh lacer
 8. Suspension sleeve
 9. Elevated vacuum
- b. Demonstrate the skills to fabricate:
 1. Exoskeletal transtibial prosthesis
 2. Endoskeletal transtibial prosthesis
 3. Soft interface
 4. Diagnostic sockets
- c. Demonstrate knowledge of components for various transtibial prostheses.
- d. Demonstrate knowledge and skill to prepare positive models for transtibial prostheses (category I modifications only*).
- e. Demonstrate the skills of transtibial alignment and transfer.
- f. Demonstrate techniques for cosmetic finishing of a transtibial prostheses.

C.5.4 Knee Disarticulation Prostheses

- a. Demonstrate knowledge of knee disarticulation prosthetic designs and principles.

C.5.5 Transfemoral Prostheses

- a. Demonstrate knowledge of the following transfemoral socket designs and suspensions systems:
 1. Ischial containment
 2. Quadralateral
 3. Roll-on suction with or without locking mechanism
 4. Hip joint, pelvic band and waist belt
 5. Suction socket
 6. Auxiliary suspension (TES belt, Silesian bandage)
 7. Suspension sleeve
 8. Elevated vacuum
- b. Demonstrate the skills to fabricate:
 1. Diagnostic sockets
 2. Endoskeletal transfemoral prosthesis
- c. Demonstrate knowledge of components for various transfemoral prostheses.
- d. Demonstrate knowledge and skills to prepare positive models for transfemoral prostheses (category I modifications only*).
- e. Demonstrate the skills of transfemoral alignment and transfer.

- f. Demonstrate techniques for cosmetic finishing of transfemoral prostheses.

C.5.6 Hip Disarticulation / Hemipelvectomy Prostheses

Demonstrate knowledge of hip disarticulation and hemipelvectomy prosthetic designs and principles.

C.6.0 UPPER EXTREMITY PROSTHETICS

C.6.1 Transradial Prostheses

- a. Demonstrate knowledge of the following transradial designs and principles:
 - 1. Partial hand
 - 2. Passive/cosmetic
 - 3. Flexible and rigid hinges
 - 4. Suspension techniques
 - 5. Body powered
 - 6. External powered
- b. Demonstrate the skills to fabricate:
 - 1. Short transradial prosthesis
 - 2. Long transradial prosthesis
 - 3. Rigid and flexible hinges
 - 4. Control harness and cable system
- c. Demonstrate knowledge of components for various transradial prostheses.
- d. Demonstrate knowledge and skill to prepare positive models for transradial prostheses (category I modifications only*).
- e. Demonstrate the skill of transradial alignment.
- f. Demonstrate techniques for cosmetic finishing of transradial prostheses.

C.6.2 Transhumeral Prostheses

- a. Demonstrate knowledge of the following transhumeral designs and principles:
 - 1. Elbow disarticulation
 - 2. Shoulder disarticulation
 - 3. Interscapular-thoracic
 - 4. Transhumeral
 - 5. Passive/cosmetic
 - 6. Body powered
 - 7. External powered
 - 8. Suspension techniques
- b. Demonstrate the skills to fabricate:
 - 1. Transhumeral prosthesis
 - 2. Control harness and cable system
- c. Demonstrate knowledge of components for various transhumeral prostheses.
- d. Demonstrate knowledge and skill to prepare positive models for transhumeral prostheses (category I modifications only*).
- e. Demonstrate the skill of transhumeral alignment.

- f. Demonstrate techniques for cosmetic finishing of transhumeral prostheses.

C.7.0 COMPUTER AIDED DESIGN/COMPUTER AIDED MANUFACTURING

- a. Demonstrate knowledge of CAD/CAM concepts for prosthetic applications.

* **Definition/hierarchy of modifications:**

- *Category I - Artifact modifications*
 - *Removal of surface deformations caused by poor casting technique*
 - *Filling of voids produced by air in the plaster mixture, cast sock/nylon separation*
 - *Extraneous surface irregularities resulting from cast seams, leaks, etc*
 - *Any other surface modifications and smoothing procedures that do not substantially alter the surface topography or biomechanical attributes of the model*

- *Category II - Accommodative modifications*
 - *Standardized buildups/reliefs over well-identified common areas of concern such as malleoli, bony prominences on foot, knee joint regional prominences, etc.*

- *Category III - Biomechanical modifications*
 - *Modifications to negative/positive model resulting in significant changes to the volumetric/weight-distribution characteristics of the ensuing socket*
 - *Any changes to the negative/positive model that would alter the pre-existing biomechanical properties of the model*

Section D: Practicum

D.1.0 PRACTICUM CONTENT

The student must be able to articulate how the theoretical concepts learned within didactic coursework are exemplified in laboratory settings within all of the content areas listed. The student also must have had opportunities to, under supervision, participate and demonstrate novice skills within each of the content areas.

D.1.1 - Lower Extremity Orthoses

D.1.2 - Upper Extremity Orthoses

D.1.3 - Spinal Orthoses

D.1.4 - Computer Aided Design/Computer Aided Manufacturing for Orthotic/Prosthetic Applications

D.1.5 - Lower Extremity Prostheses

D.1.6 - Upper Extremity Prostheses

D.2.1 Explain the role of the orthotic and prosthetic technician in providing ethical patient-centered care by applying the American Board for Certification in Orthotics, Prosthetics and Pedorthics Code of Professional Responsibilities in technical support of patients.

It is recommended that participating facilities comply with facility accreditation standards as outlined by a national orthotic and prosthetic accrediting body.

It is recommended that the practicum be 120 hours per discipline.