



How to Use the Detailed Content Outline to Prepare for the Orthotist, BOC-Certified (BOCO) Multiple Choice Certification Examination

The **Orthotist, BOC-Certified Content Outline** is a schedule of the tasks involved and the domains of the practice of an Orthotist. The Content Outline is derived from a Job Analysis, a careful description of the tasks performed by practitioners. A randomized national survey of O&P practitioners is conducted by BOC every five years to determine what changes, if any, have occurred in the practice. From this survey the Content Outline is updated and the exam questions revised.

You will have three hours for completion of this segment, consisting of 150 multiple choice questions and 15 unscored pre-test questions. Each question on the exam is based on this outline. In fact, **none** of the BOC certification exams can contain any question, case simulation or demonstration that cannot be directly linked to a specific item in the relevant Content Outline. Therefore, to prepare to take the exam, we suggest that you study this Outline and especially consider what the underlying knowledge, skills and abilities you need to be able to serve patients.

The format of the exam is such that it does not follow this outline in order; rather, questions regarding outline sections are placed randomly throughout the exam. In order to understand how to fit a Lumbosacral Orthoses for example, one has to comprehend the relevant anatomy, the pathophysiology, the material and engineering sciences, etc.

A practitioner must be a complete instrument for patient care, providing maximum benefit, not just fabrication, adjustment or placement. This, then, is the basis for the examinations that test the knowledge, skills and abilities of a competent practitioner. It is not sufficient just to know how to fit a patient with a device – your patient has to be able to benefit from your service. This will not happen until s/he, for example, knows how to don and doff, care for, and in general utilize the orthosis provided. This is why each candidate is required to have a significant period of patient care practice experience to be eligible to take the exam. You won't get all your preparation at school --you will learn the fundamentals and then sharpen them during patient care practice. To study, review your original training materials. Bring your patient experience into play; it is indispensable.

To study a good sample of questions on-line please refer to the **Self-Assessment Examination (SAE)** or practice test, developed by experts to help you prepare for certification. All questions come from prior exams; answers are confidential, a computer grades your exam. Several reports help you understand your grade and establish your strengths and weaknesses. You may re-take the exam as often as you like, in the privacy of your home or office. For more information regarding the SAE, please go to www.bocusa.org.

Now, to the specifics of the Orthotist Detailed Content Outline.

Performance Levels

There are three Performance Levels, or levels of difficulty, for exam questions: Recall (RE), Application (AP), and Analysis/Evaluation (AN).

RECALL (RE) questions require only the recognition of specific factual information, which generally does not vary, relative to the situation. An example is:

The appropriate tool for measuring range of motion is a

- A. Ritz stick
- B. caliper
- C. goniometer
- D. tape measure

APPLICATION (AP) questions require the comprehension, interpretation or manipulation of concepts or data, in which the response or outcome is situationally dependent, but not overly complex (i.e., application of knowledge which varies based on patient and environmental characteristics). An example is:

The neighbor of a brace patient calls the patient's orthotist. He wants to know the patient's condition so he can help the patient at home. The orthotist should FIRST

- A. refer the neighbor to the patient's physician
- B. refer the neighbor to the patient
- C. tell the neighbor about the brace
- D. tell the neighbor the patient's condition

ANALYSIS/EVALUATION (AN) questions require integration or synthesis of a variety of concepts or elements to solve a specific problem situation (i.e., evaluating and rendering judgments on complex problems with many situational variables). An example is:

After A 25-year-old patient has had recent surgery for a herniated lumbar disc and has been fitted with an LSO. Weak dorsiflexion is also noted. Which of the following would also be indicated for this patient?

- A. KO
- B. AFO
- C. UCBL
- D. TLSO

Now, examine the Content Outline. Note the three **bold face numbers on the top right** of the Outline: these indicate the number of questions in each section by performance level. The total number of questions, by performance level is summed at the end of the Content Outline (i.e., 37 RE, 75 AP, 38 AN, total 150 questions). Note half of the questions (75) are at the Application (AP) level, which is testing your understanding, analysis and management of concepts or data from a patient in a particular situation. Both AP and AN questions require clinical patient care experience.

To understand how to use the Content Outline to anticipate the exam questions, consider the following two examples. Compare Example 1 and 2 below with the Content Outline section 1 and 8. Notice that there is not one reference source encompassing all that is contained in the exam; it is a combination of education, training and experience.

Example 1: *Reprinted from Orthotist Content Outline*

	<u>RE</u> 2	<u>AP</u> 7	<u>AN</u> 2
I. Facilities Management			
A. Determine elements of the fitting room (e.g., adjustable stool, exam/fitting table, mirror, hard back chair, and parallel bars, or other appropriate ambulating device)			
B. Determine required equipment, tools, and materials			
1. manufacturing/alteration equipment (e.g., heat gun, oven, bending irons, sewing machine, alignment device, anvil, grinding and carving tools, vise)			
2. measuring devices (e.g., tape measures, goniometer, calipers, VAPC caliper, ML gauge, measuring chart, plumb bob, yard/meter stick)			
3. casting equipment and materials (e.g., saws, spreaders, stockinette, indelible pencil, plaster of paris, fiberglass, surgical gloves, water, bowls)			
C. Comply with environmental safety regulations in all practice settings (e.g., pathogens, cross-infection, work place hazards)			
D. Assure quality care by development and maintenance of policies and procedures regarding patients, prescribers, personnel, maintenance of records, etc.			
E. Comply with HIPAA regulations			

Section 1. There will be 11 questions on the exam devoted to **Facilities Management**, 2 RE, 7 AP, and 2 AN. To understand this section it may be helpful to download the BOC Facility Accreditation materials, www.bocusa.org for review of important aspects of facility management.

- You may be asked how to use equipment (1.B.), measuring devices (1.B.2.), or casting equipment (1.B.3.).
- Knowledge about the fitting room (1.A.) and tools required for proper patient care (1.B.) may be asked.
- Questions are asked regarding technical and clinical elements of the fitting room (1.A.) and safety (1.C.).
- For C, think “OSHA,” work safety, and make sure you are current on those regulations.
- There are also questions throughout the exam relevant to your office professional policies and procedures (1.D.), so review your manuals and records system.
- Questions concerning exposure to pathogens and cross-infection (1.C.) are asked.

Example 2: *Reprinted from Orthotist Content Outline*

	<u>RE</u> 5	<u>AP</u> 11	<u>AN</u> 12
8. Evaluation/Selection of Product/Model/Type of Orthoses			
A. A. Cervical/Cervical Thoracic Orthoses (CO, CTO)			
1. semi-rigid (e.g., Philadelphia)			
2. *rigid (e.g., multiple post)			

B. Spinal Deformity Orthoses (e.g., scoliosis, lordosis, kyphosis)
C. Thoraco-Lumbo-Sacral Orthoses (TLSO)
1. *rigid (e.g., Taylor, Knight-Taylor, plastic, hyperextension)
2. flexible (e.g., with steel stays, thermal molded insert)
D. Thoraco-Lumbo-Sacral-Hip Orthoses (e.g., spica)
E. Lumbo-Sacral Orthoses (LSO)
1. *rigid (e.g., chairback, Knight, Harris, Williams flexion, plastic)
2. flexible (e.g., with steel stays, thermal molded insert)
F. *Hip Orthoses (HO) (e.g., Pavlik Harness, Scottish Rite, abduction splint, dynamic and adjustable R.O.M.)
G. Knee Orthoses (KO)
1. *rigid types (e.g., ACL, PCL, MCL, OA, multi-ligamentous, genu recurvatum, dynamic and adjustable R.O.M.)
2. flexible (e.g., patella-stabilizer, elastic type knee supports with or without inserts/hinges/pads)
H. *Hip Knee Ankle Foot Orthoses (HKAFO) (e.g., twister cable, parapodium, RGO, dynamic and adjustable R.O.M.)
I. *Knee Ankle Foot Orthoses (KAFO) (e.g., double or single upright, leather or plastic, dynamic and adjustable R.O.M., ischial weight bearing)
J. *Ankle Foot Orthoses (AFO) (e.g., double or single upright, leather or plastic, dynamic and adjustable R.O.M., posterior leaf spring (metal or plastic))
K. *Foot Orthoses (FO) (e.g., arch support, UCBL, straight/ reverse last shoes, shoe modifications, foot plate)
L. Partial Foot
1. *AFO-style
2. toe-filler in shoe
M. Wrist/Hand/Finger Orthoses (WHFO, WHO) (e.g., dynamic and adjustable R.O.M., resting, and functional orthoses)
N. Elbow Orthoses (EO) (e.g., dynamic and adjustable R.O.M., resting, and functional orthoses)
O. Shoulder Orthoses (SO) (e.g., dynamic and adjustable R.O.M., resting, and functional orthoses)
P. *Functional Fracture Orthoses (e.g., upper extremity and lower extremity)

Section 8. Evaluation/Selection of Product/Model/Type has 28 total questions, 5 RE, 11 AP, and 12 AN questions, regarding products, models, and types of orthoses, which may be placed at random anyplace throughout the exam.

- Questions may be asked regarding any of these orthoses (8. A through P) relative to the patient and clinical situation, and may be asked in any section of the exam, relative to any professional activity, i.e., ethics, patient communication.
- You need to know the underlying pathology (3.A. 2-3), the anatomy (7.A.1-2), to explain the objective of each device (4.A.),
 - measuring for each device (1.B.2., 7.A.),
 - fitting and customizing these devices (5.A.)
- You may be asked for information (4.), on how to:

- don and doff the device (4.B.)
- communicate logically (4.)
- observe patient confidentiality (2.A.).



Orthotist Detailed Content Outline	Cognitive Level			Total
	Recall	Application	Analysis	
An "X" denotes the examination will NOT contain items for the given task at the cognitive level indicated in the respective column (recall, application, or analysis).				
I. Facilities Management	2	7	2	11
A. Determine elements of the fitting room (e.g., adjustable stool, exam/fitting table, mirror, hard back chair, and parallel bars, or other appropriate ambulating device)			X	
B. Determine required equipment, tools, and materials				
1. manufacturing/alteration equipment (e.g., heat gun, oven, bending irons, sewing machine, alignment device, anvil, grinding and carving tools, vise)			X	
2. measuring devices (e.g., tape measures, goniometer, calipers, VAPC caliper, ML gauge, measuring chart, plumb bob, yard/meter stick)			X	
3. casting equipment and materials (e.g., saws, spreaders, stockinette, indelible pencil, plaster of paris, fiberglass, surgical gloves, water, bowls)		X	X	
C. Comply with environmental safety regulations in all practice settings (e.g., pathogens, cross-infection, work place hazards)				
D. Assure quality care by development and maintenance of policies and procedures regarding patients, prescribers, personnel, maintenance of records, etc.				
E. Comply with HIPAA regulations			X	
II. Perform Professional Practice/Ethics	3	5	1	9
A. Maintain patient confidentiality			X	
B. Provide training, lectures and information to staff or other health care professionals on current orthotic information			X	
C. Establish a quality assurance system that evaluates patient care				
D. Participate in orthotic clinics		X	X	
E. Fulfill necessary continuing education requirements		X	X	
III. Patient Assessment/Evaluation	3	12	10	25
A. Establish relationship with patient				
1. Patient intake				

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*Tasks are available for assessment by the Orthotist Clinical Simulation Examination.				
a. Record all personal and insurance information about patient			X	
b. Discuss financial matters for services/devices with patient			X	
c. Determine patient's expectations				
d. Interview patient and obtain history			X	
e. Collect and evaluate patient records				
f. Identify the pathology of the disease to provide the proper orthosis or prosthesis				
g. Discuss any related medical treatment(s)			X	
B. Evaluate and assess patient to determine				
1. skin condition			X	
2. range of motion				
3. muscle strength				
4. manual dexterity				
5. coordination				
6. posture and gait				
7. proprioception			X	
8. sensation			X	
C. Assess Prescription				
1. Determine elements of a valid prescription				
a. Verify validity of prescriber		X	X	
b. Verify information contained on prescription		X	X	
2. Determine relation of prescription to presenting problem			X	
3. Discuss prescription with patient (i.e., explain the patient's role/responsibilities)			X	
4. Contact prescribing doctor and discuss/revise prescription				
IV. Communication/Patient Education	4	12	4	20
A. Explain purpose/objective of orthosis				
1. Inform patient and/or caregiver of the various procedures to be performed			X	
2. Explain advantages and disadvantages			X	
3. Determine patient's expectations				

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4. Explain patient's role/responsibilities			X	
B. Provide initial instructions				
1. Instruct patient and/or caregiver in donning, doffing, care of orthosis/prosthesis			X	
2. Demonstrate proper application, alignment and removal			X	
3. Instruct patient and/or caregiver in fitting adjustments such as using prosthetic socks or tightening straps, etc.			X	
4. Explain how to recognize potential problems (e.g., pressure points, skin breakdown, numbness, contractures)				
5. Explain care and cleaning procedures		X	X	
C. Evaluate psychological impact of devices on patient, family and others				
D. Establish procedures for patient follow-up				
1. Initiate and encourage on-going communication with patient and/or caregiver			X	
2. Develop and maintain patient's records			X	
3. Inform patient and/or caregiver of provisions for continued servicing of device (e.g., adjustments, consultation)			X	
4. Communicate with the patient and/or caregiver verbally and in writing			X	
E. Conduct inter-professional communications			X	
V. Orthosis Application and Delivery	7	12	1	20
A. Finalize alignment and fit orthosis to patient				
1. Don orthosis to patient and finalize alignment, fit, and cosmetic appearance			X	
2. Demonstrate proper application, alignment and removal			X	
3. Demonstrate to patient and/or caregiver donning, doffing, fitting adjustments and care of orthosis			X	
4. Explain how to recognize potential problems (e.g., pressure points, skin breakdown, numbness, contractures)				
5. Have patient and/or caregiver demonstrate proper application and removal			X	
6. Have patient and/or caregiver sign receipts and acknowledgments		X	X	
B. Explain follow-up procedures		X	X	
C. Refer to physician for post-fitting follow-up		X	X	

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	Recall	Application	Analysis	
VI. Patient Follow-up	2	5	1	8
A. Evaluate fit and function of orthosis/prosthesis				
B. Perform necessary adjustments			X	
C. Schedule follow-up visits		X	X	
VII. Patient Preparation/Measurements	7	11	0	18
A. Measure patient				
1. Select techniques (e.g., patient positioning, casting, tracing)			X	
2. Identify anatomical landmarks		X	X	
3. Use measuring devices			X	
B. Perform casting procedures for:				
1. upper extremity			X	
2. lower extremity			X	
3. spinal (includes cervical)			X	
4. foot only			X	
5. modifications			X	
VIII. Evaluation/Selection of Product/Model/Type of Orthoses	5	11	12	28
A. Cervical/Cervical Thoracic Orthoses (CO, CTO)				
1. semi-rigid (e.g., Philadelphia)			X	
2. *rigid (e.g., multiple post)				
B. Spinal Deformity Orthoses (e.g., scoliosis, lordosis, kyphosis)				
C. Thoraco-Lumbo-Sacral Orthoses (TLSO)				
1. *rigid (e.g., Taylor, Knight-Taylor, plastic, hyperextension)				
2. flexible (e.g., with steel stays, thermal molded insert)			X	
D. Thoraco-Lumbo-Sacral-Hip Orthoses (e.g., spica)			X	
E. Lumbo-Sacral Orthoses (LSO)				
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G. Knee Orthoses (KO)				
1. *rigid types (e.g., ACL, PCL, MCL, OA, multi-ligamentous, genu recurvatum, dynamic and adjustable R.O.M.)				
2. flexible (e.g., patella-stabilizer, elastic type knee supports with or without inserts/hinges/pads)			X	
H. *Hip Knee Ankle Foot Orthoses (HKAFO) (e.g., twister cable, parapodium, RGO, dynamic and adjustable R.O.M.)				
I. *Knee Ankle Foot Orthoses (KAFO) (e.g., double or single upright, leather or plastic, dynamic and adjustable R.O.M., ischial weight bearing)				
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K. *Foot Orthoses (FO) (e.g., arch support, UCBL, straight/ reverse last shoes, shoe modifications, foot plate)			X	
L. Partial Foot				
1. *AFO-style				
2. toe-filler in shoe			X	
M. Wrist/Hand/Finger Orthoses (WHFO, WHO) (e.g., dynamic and adjustable R.O.M., resting, and functional orthoses)				
N. Elbow Orthoses (EO) (e.g., dynamic and adjustable R.O.M., resting, and functional orthoses)				
O. Shoulder Orthoses (SO) (e.g., dynamic and adjustable R.O.M., resting, and functional orthoses)				
P. *Functional Fracture Orthoses (e.g., upper extremity and lower extremity)				
IX. Fabrication	2	2	7	11
A. Select componentry (e.g., ankle, knee, hip, shoulder, elbow, wrist) .				
B. Select material types (e.g., plastic, metal, leather)				
C. Rectify positive molds				
Totals	35	77	38	150

* Tasks with asterisks are eligible for Clinical Simulation Examination (CSE) problems. Each

Orthotist CSE will contain 8 problems. Three (3) of these problems will involve Spinal or Cervical cases, and 5 problems will involve Upper or Lower Extremity cases. No Upper Extremity problems will be written involving Central Fabricated orthoses. No Cervical problems will be written involving Central Fabricated or In-House Fabricated orthoses. No problems will be written involving patients under the age of 19.