



INTERNATIONAL SOCIETY FOR PROSTHETICS AND ORTHOTICS

GUIDELINES FOR FINAL EXAMINATION PROTOCOL

**CATEGORY II PROFESSIONAL
ORTHOPAEDIC TECHNOLOGIST**

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Preamble: The proposed framework is intended to give a guideline to those wishing to set up a final examination process for ISPO Category II professionals. It is recognized that national or institutional practices or regulations may introduce or require variations. This framework is intended to outline the current international (ISPO) minimal acceptable standards. More specifically, although variations may be acceptable, it is provided as a guideline for those intending to seek ISPO Category II recognition.

1 Purpose / Objectives

- To set minimum standards for those who are to set up a final examination process for Category II professionals.
- To standardize the Category II final examination process.
- Allow minimum standards for Category II to be measured effectively.
- To establish a process that ensures that ISPO will be able to award the IPSO Category II certificate to those who successfully complete the final examination process.
- To ensure fair and equitable assessment of candidates.
- To ensure the examination process is reflective of the course content which in turn is in keeping with ISPO's, "Information Package for Category II Professionals".
- To ensure that the examination process is designed to accurately measure the candidate's acquisition of course content.

2 Candidates

- Those who have graduated or are graduating from a recognized ISPO Category II Prosthetic and Orthotic school who have met the requirements to present for the final examination.
- or
- Those who have a minimum of five years professional experience in a prosthetic/orthotic clinic. The candidate should possess a mid-school certificate (11 years schooling) and be able to furnish proof of continued education in such areas as Anatomy, Pathology, Biomechanics and Prosthetics and Orthotics Science, etc.

3. Board of Examiners

- For each examination, a Board of Examiners must be selected whose role is to oversee the documentation, ensure that the examination is representative of the syllabus, evaluate candidates in the final examination process and certify the examination results.
- The Examiners shall be appointed and the Examination Board constituted in accordance with national or institutional regulations but normally shall include at least one appropriate medical specialist and one Category I professional. The Examination Board should be comprised of the following: One Chairperson with up to three other appointed individuals. Of which one or two should have clinical backgrounds in prosthetics and/or orthotics and one having a related medical background. Where possible, a qualified international assessor should be integrated into the local board.
- It will be the Chairpersons responsibility to keep general order during the examination process and to ensure the guidelines for Examination Protocol are being adhered to.

4. Scope of Examination

The Examination will be comprised of theoretical & practical sections. Each section must be successfully completed in order for the candidate to pass.

5. Theoretical Section

5.1 The theoretical section will examine the candidates knowledge of the following subjects:

- Anatomy & Physiology *
- Pathology *
- Biomechanics and Prosthetic & Orthotic Sciences *
- Mathematics
- Mechanics
- Materials Technology
- Workshop Technology
- Clinic Workshop and Business Management
- Technical Drawing

*** Mandatory Pass**

- 5.2 Where an institution is seeking ISPO recognition it is recommended that the theoretical papers are prepared in a multiple choice format to overcome the language barriers sometimes found in developing countries or in a format similar to that which is utilized locally. Multiple choice questions should be constructed and marked within the appropriate conventions. For guidance these might comprise of approximately 60 questions per subject which should be representative of the balance of the syllabus and last about 90 minutes per subject.
- 5.3 One of the Board of Examiners, preferably the External Examiner, should ensure the content of the exams meets the minimum requirements and observe the examination processes where appropriate.

6 Practical Section:

- 6.1 The practical section will examine the candidate's technical, workshop and clinical skills as delineated in the curriculum and syllabus and as described by ISPO's "Information Package for Category II Professionals". The Practical section of the exam will encompass the following:
- Presentation of the case history of the subjects/patients.
 - Findings of clinical assessment .
 - Articulation of the prosthetic and orthotic prescription.
 - Overview of measurement, casting, cast rectification/modification and fabrication/assembly process.
 - Overview of the initial fitting process, describing fitting and alignment issues dealt with.
 - Presentation by the candidate of the subject/patient for final fitting and evaluation.
 - Evaluation of the technical standard of the device produced.
 - Evaluation of the quality of fit.
 - An illustration may be required showing the major elements of bench alignment and relevant components.

- 6.2 The format and guideline for the candidate presentation should follow the Template for Clinical Presentation appended to this document (Appendix I).
- 6.3 For each candidate the practical examination shall be representative of the clinical content of the curriculum and balanced in complexity between prosthetics and orthotics. For example, a candidate could be asked to provide a prosthesis to a trans-femoral amputee and an ankle-foot-orthosis to a subject with a neuromuscular disability. Alternatively, he/she may be asked to provide a prosthesis to a trans-tibial amputee and a knee-ankle-foot orthosis to a patient with poliomyelitis. Other variations of fittings can be utilized as long as they fall within the same degree of difficulty. In all instances a prosthesis and an orthosis must be included. The Examination Board must ensure the protocol used is equitable for all candidates.
- 6.4 Examination subjects will normally be determined and indicated to the individual candidates 7 days prior to examination.
- 6.5 The candidate is obliged to perform all stages of the fitting and fabrication procedures on his/her own without assistance from other parties. Any necessary significant intervention of supervising staff should be noted for the Examination Board. This process must be completed under the scrutiny of members of the appointed Board of Examiners (one who is not a representative of the educational institution involved). Any significant intervention necessary by supervising staff should be noted for the Examination Board.
- 6.6 Time allowed during the examination for completion of each subject may exceed the accepted standard within the profession by 30%. Under normal circumstances a total of 8 working days will be allowed for the completion of both cases. There can be allowances in these parameters to allow for regional variation.

- 6.7 Each candidate will be given a maximum of 80 minutes to present both cases for examination. Normally presentation of each case will occupy approximately 15 minutes. This leaves time for structured questioning and proper evaluation by the Examination Board. (Refer to Appendix I).
- 6.8 The appended “Examiner Guidance Sheet” (**Appendix II – in development**) is to be utilized as a guideline for the Examination Board during the presentation session and in the examination of fit and function. The Chair of the Examination Board would set forth the strategy on how the questions could be asked during the examination process and determine who would carry out the physical inspections. Normally one of the P/O practitioners would carry out the physical inspection of fit and function.
- 6.9 All examiners will utilize a **standard marking scale or system**. The Chair of the Examination Board in collaboration with the institution involved, will determine which marking system would be most appropriate. The marking system implemented would normally be similar to the one used by the institution involved with the examination process.
- 6.10 The evaluation of the practical examination is to follow the “Practical Examination Marking Sheet” (**Appendix III - in development**) and will follow the protocol developed for candidate presentation outlined in Appendix I.
- 6.11 The final result of the practical section is obtained by averaging the results of both the prosthetic and orthotic case fittings. Each fitting grade should encompass the following:
- practical work (progress report or similar to assist with this) – 15%
 - patient presentation (oral presentation) – 30%
 - practical assessment (functional outcome) – 55%

NB – *Appendix III will include a working sample of a Progress Report.*

6.12 The final result of the examination should encompass the average of the written, practical and in some instances an oral examination. It is recommended that the practical examination be given the highest weighting. An example of this could be as follows:

Written Examination - 35%

Practical Examination – 65% (average of cases presented)

Optional – Oral Examination – 10% (Written and Practical weighting could be adjusted to 30% and 60% respectively)

6.13 Examination setting:

- No cameras or photography allowed during the practical examination process.
- The exam content and marks given must be kept confidential amongst Examiners.
- There should be no observers allowed during the practical examination process unless the appointed Chairperson of the Examination Board approves. Clinical teachers involved should be available to answer questions if required by the Examination Board.
- When it is necessary to use translators, it should be carefully controlled and of good quality. Translators should be instructed only to translate the exam question and the candidates answer. There should be no discussion or comment passed between the translator and student.

APPENDIX I

Template for Clinical Presentation

**ISPO
Practical Examination**



Orthotics & Prosthetics

Template for Clinical Presentation

APPENDIX I

Template for Clinical Presentation

40 minutes - Orthotic Case Presentation

O1. Patient Presentation: * - introduction of patient - patient history - verbal synopsis and demonstration of the major clinical findings, which should include: - muscle and range of motion testing - sensation - joint alignment and stability (deformities stated) - skin and vascular condition - describe critical issues of both static and dynamic gait - description of orthotic treatment protocol implemented NOTE: - old orthoses should be available and/or brought in with patient - patient should be prepared for examination (ie: shorts, etc.) but not wearing old orthoses	STUDENT PRESENTATION 15 Minutes 30 MARKS * MANDATORY PASS
TOPICS FOR EXAMINER ASSESSMENT The orthoses will be assessed and the candidates will be expected to answer questions on any of the following areas O2. Casting Procedure - elaborate on how the cast was taken - what procedure/technique was utilized - objectives of joint positions desired in casting O3. Cast modifications/rectifications to the positive cast - describe the main tasks performed and major issues accounted for O4. Technical production of this orthosis - what materials were used and why - what components were selected and why? - other technical issues that should be presented O5. Static fit of the orthosis * - description of initial position and angles - trimlines described and explained - comments on balance, leg length discrepancy, etc. O6. Dynamic assessment of the orthosis. * - describe the current patients gait with orthosis - major gait variables affected or not affected by orthosis - comment on 3 point pressure or other control systems implemented - candidate comments about the dynamic function of the orthosis - skin check after walking O7. Instructions to the patient upon dispensing the orthosis O8. FINAL COMMENTS: - what further changes would be made? - are there any concerns that the candidate has?	TOPICS FOR EXAMINER QUESTIONS 25 Minutes #2 & #3 10 MARKS #4 5 MARKS #5 & #6 40 MARKS * MANDATORY PASS (#5 & #6) #7 5 MARKS #8 10 MARKS

40 minutes - Prosthetic Case Presentation

P1. Patient Presentation: * - introduction of patient - patient history - verbal synopsis and demonstration of the major clinical findings, which should include: - skin and vascular condition - muscle and range of motion testing - sensation - joint alignment and stability (deformities stated) - description of prosthetic treatment protocol implemented NOTE: old prostheses should be available and/or brought in with patient patient should be prepared for examination (ie: shorts, etc.) but not wearing old prostheses	STUDENT PRESENTATION 15 Minutes 30 MARKS * MANDATORY PASS
TOPICS FOR EXAMINER ASSESSMENT The prostheses will be assessed and the candidates will be expected to answer questions on any of the following areas P2. Casting Procedure - elaborate on how the cast was taken - what procedure/technique was utilized - objectives of joint positions desired in casting P3. Cast modifications/rectifications to the positive cast - describe the main tasks performed and major issues accounted for P4. Technical production of this prosthesis - what materials were used and why - what components were selected and why? - other technical issues that should be presented P5. Static fit of the prosthesis * - description of initial position and angles - trimlines described and explained - comments on balance, leg length discrepancy, etc. P6. Dynamic assessment of the prosthesis * - describe the current patients gait with prosthesis - major gait variables observed with the prosthesis (positive and negative) - candidate comments about the dynamic function of the prosthesis - skin check after walking P7. Instructions to the patient upon dispensing the prosthesis P8. FINAL COMMENTS: - what further changes would be made? - are there any concerns that the candidate has?	TOPICS FOR EXAMINER QUESTIONS 25 Minutes #2 & #3 Progress Report 10 MARKS #4 5 MARKS #5 & #6 40 MARKS * MANDATORY PASS (#5 & #6) #7 5 MARKS #8 10 MARKS

APPENDIX II
Examiner Guidance Sheet

ISPO
Practical Examination



Orthotics & Prosthetics

Examiner Guidance Sheet

(IN DEVELOPMENT)

APPENDIX III
Practical Examination Marking Form

ISPO
Practical Examination



Orthotics

Practical Examination
Marking Form

(IN DEVELOPMENT)