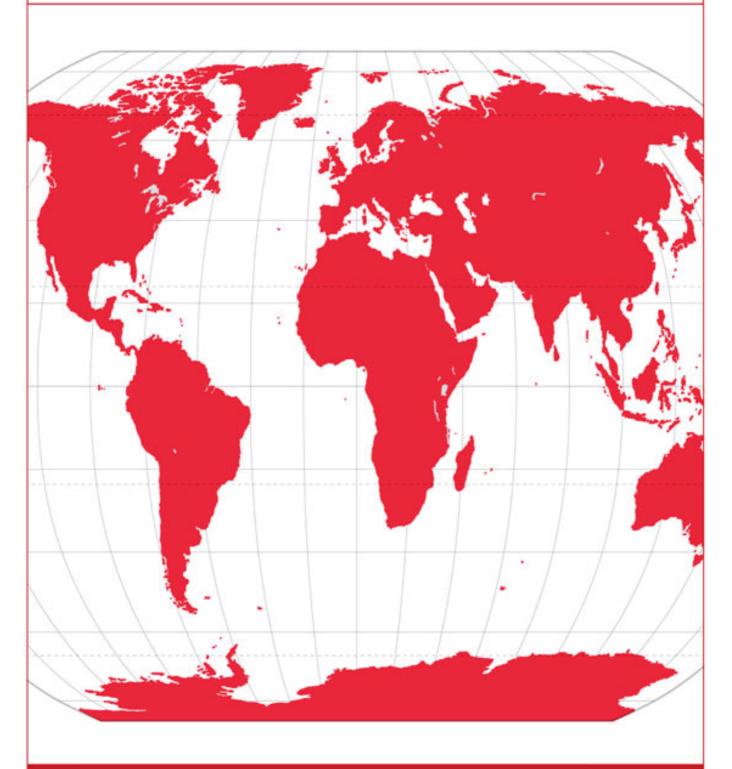# IIW Guideline
Blended LEARNING

Minimum Requirements for the Education,
Examination and Qualification

IAB-195r3-18

MINIMUM REQUIREMENTS FOR THE EDUCATION,
TRAINING, EXAMINATION AND QUALIFICATION

BLENDED LEARNING (BL)

E-Learning (EL)

Prepared and issued by the IAB-International Authorisation Board
Under the authority of the IIW-International Institute of Welding

Table of Contents

Part I Basic requirements concerning the application of BL/EL by IIW acknowledged ATBs which are of relevance for any kind of BL/EL within IIW and EWF

1   General introduction and scope of the document

This guideline for blended learning / E-Learning has been prepared, evaluated and formulated by Group A "Education, Training and Qualification" of the International Authorisation Board of the International Institute of Welding.

This guideline provides the approach using blended learning / E-Learning techniques. The aim of blended learning / E-Learning is to improve access to IAB approved qualifications (diplomas). It is essential that the quality of courses delivered in this way must be equivalent to that of the classroom learning and this guideline sets out the minimum requirements necessary to satisfy this aim.

2   Definition / Nomenclature

Assessment:
Instrument to check the process of learning

Blended learning:
Term describing learning, that mixes various event-based activities, including face to face classroom presentations, and self-paced studies.

CBT:
Computer based training

Classroom Training
General Classroom training (students physically present in class), Web conferencing, online seminars and video-conferencing are considered as classroom delivery.

DL:
Distance Learning

Distance learning is the education (including for e.g. e-Learning, video, Interactive multimedia) of students who are not physically present at a school or training center.

EL:
e-Learning
Educational technology is defined as "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources".

Progressive Assessment:
Various methods of assessment, including questionnaires and exercises, that are additional to the training material provided and are used to monitor student's progress. Such assessments are completed by the student and returned to the training organisation for evaluation.

LMS
Learning management system

A software used for delivering, tracking and managing training and education

Study plan:
Training program that defines the sequence, content and time allocation of the course.

3   Maximum Duration of DL/EL

The maximum duration of the blended learning part of each applicable guideline is given in part II. The duration refers to theoretical training only.

4   Organisation and course management

To use blended delivery techniques effectively, the ATB will need specific resources and procedures to operate these courses in an acceptable and effective way. These resources and procedures shall include:

- a study plan / detailed layout for each course,
- suitable training aids for blended learning (see also item 5),
- procedures and material for the progressive assessment of students,
- a system for responding to technical and organisational questions and queries raised by students,
- an effective management structure covering:
  - student supervision
  - electronic communication
  - internal examination procedures
  - distribution of course materials
  - student support
- periodic evaluation of course materials and methods of delivery,
- procedures to ensure that the content of blended learning / E-Learning packages follows IAB guidelines for the appropriate grade of qualification.

5   Teaching methods

5.1 Classroom delivery methods

Classroom training uses teaching aids such as LMS, overhead projectors, slide shows, computer presentations, video, course notes and demonstrations. Specific requirements for each education and training course are given in doc IAB 001 and in the applicable guideline.

Web conferencing, online seminars and video-conferencing are considered as classroom delivery, if provided the training institute must ensure real-time communication amongst participants and lecturers.

5.2 Laboratory and practical work

Workshop training, demonstration, and laboratory work cannot be delivered by blended / E-Learning techniques. Requirements for laboratory work are given in doc IAB 001 and in the applicable guideline.

5.3 Blended Learning methods

Blended learning is offered through appropriate alternative learning methods. These may include:

- Text documents
- Audio and video recordings

- e-learning programs

- Learning management system

- Computer-aided assessments

- Online multiple-choice tests

The actual techniques chosen are not restricted to those described and may involve a combination of various options.

The courses may use an increased proportion of classroom training (over and above the minimum levels set out in the guidelines).

The chosen teaching methods shall be properly balanced in order to guarantee that the learning outcomes are equivalent to those attained in a conventional classroom situation.

In addition, training materials shall cover references to examples and applications, when applicable.

During the BL training, the system shall include a communication platform to offer:

- Communication of the teacher with the students for tutoring, with a guaranteed appropriate minimum answering time (e.g. 2 working days);

- Communication among the students for the exchange of information;

During the BL program and periodically (e.g. at the end of each item of the relevant guideline), students should be offered the opportunity to self-evaluate their understanding of the attended training. The following requirements apply:

- questions shall be at the level required in the harmonized exams;

- each item shall be covered by a minimum of 3 questions per hour (as given in the relevant guideline);

- students shall be informed about the scoring and have the chance to retake the questions (an automatic feedback to the student regarding incorrect answers is highly recommended).

6   *Monitoring Student Progress*

In addition to self-evaluation, periodic assessments shall be carried out for each module in order to evaluate the progress of students. These assessments are to be conducted to provide feedback to the training organisation to evaluate whether students:

- are making satisfactory progress in their understanding of the training material provided.

- are capable of implementing the newly acquired knowledge

Students are expected to achieve an acceptable standard on each they seat in the examination of the relevant module. These assessments are under the responsibility of the ATBs.

Training organisations shall provide support to students who are not making satisfactory progress and will endeavour to identify the cause when a student's work is not reaching an acceptable standard.

6.1 Questionnaires

Questionnaires may require narrative answers or the correct selection of the answer from multi-choice options.

6.2 Projects

Projects can require either the analysis of information gained from training material and bibliographic sources or the practical evaluation of tasks requiring either some assessment of the products or the generation of information obtained by testing or by other means.

6.3 Essays

Essays may be required as reviews or addressing particular components of the training course e.g., toughness, cracking mechanisms.

6.4 Interactive Electronic Assessments

Particular software programs that respond to the students depending on whether the initial answers were correct can be used.

7 Monitoring Attendance and participation

The BL program shall monitor that all the items were attended by participants. Satisfactory participation is guaranteed through student progress monitoring (as per item 6).

8 Standards

The system shall ensure that the students have access to the applicable standards, if relevant with the scope of each item and as required by the relevant guideline.

9 Evaluation of IIW BL/EL

The Approved Training Body (ATB) must present the proposed delivery package to the Authorised Nominated Body (ANB) for approval. The ANB will ensure that the proposed package is appropriate and meets the requirements of both this and the applicable IIW Guidelines.

The requirements for the review, approval and implementation of BL/EL are covered by IAB OP-15.

Part II: **Requirements on time distribution (learning at home/ classroom/ laboratory/ welding workshop) for BL/EL**

The teaching hours for classroom are the minimum hours for the blended learning route.

These was defined in agreement with the WG responsible for the development of each guideline.

IIW Qualification	Guideline	Minimum hours classroom	Applies to
IWE, IWT, IWS, IWP IAB 252		0%	Part 1 theory module may be taught in Blended Learning Programs under control of the ANB
		20%	Part 3, excluding laboratory, welding workshop, practical training and demonstrations

e.g.:

IWE Part3 duration is 295h, on Part 3 the duration of Laboratory exercises and Practical exercises is 33 h

Duration of Part 3 less the practical and laboratory exercises is 262h

Minimum hours for classroom attendance according to the above table (20%) is: 53h