OVERVIEW ON THE EVALUATION AND ASSESSMENT MECHANISMS FOR THE POSTGRADUATE EDUCATIONAL COURSE IN RADIATION PROTECTION AND THE SAFETY OF RADIATION SOURCES (PGEC)

Content

1. Introduction
   • IAEA’s Regional Training Centres
   • PGEC

2. Assessment and Evaluation Mechanisms

3. The annual PGEC Directors’ meeting

4. Conclusions
Objective

To present the evaluation and assessment mechanisms of the PGEC and the way that their results are taken into account during the annual meetings of the PGEC Directors, for the sustainability and continuous improvement of the Course
Content

1. Introduction
   • IAEA’s Regional Training Centres
   • PGEC

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4. Conclusions
IAEA’s Regional Training Centers (RTCs)

- They provide E&T in collaboration with and with the support of IAEA for the Member States (MSs) in region.
- They comply with the criteria established by the IAEA’s Steering Committee on E&T in radiation protection and waste safety.
- Education and Training Appraisal (EduTA) missions conducted in Member States hosting the RTC

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IAEA’s Regional Training Centers (RTCs)

Core criteria for establishment & recognition

• The distribution of RTCs within a region
• E&T activities conducted in a language understood by participants
• MSs with adequate radiation protection infrastructure and national capability for training at the PGEC level
• MS provide easy entry access for foreign participants, and be accessible by common transportation
• Comply with the IAEA requirements and guidance
IAEA’s Regional Training Centers (RTCs)

Core criteria for establishment & recognition

- Resources to carry out the experiments and practical exercises needed for the PGEC in cooperation of other bodies.
- Adequate administrative & logistic capability, training facilities, methodology for selection of participants and trainers, & formal system for assessing the students.
- Appropriate QMS in place for E&T activities.
- Carry out on-the-job fellowship training, conducting seminars, hosting workshops and refresher courses.
Content

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Course Content

**Syllabus:** The standard syllabus of the PGEC has a Modular Structure

**Duration:** 22 weeks on average
**Syllabus**

**Syllabus:** The standard syllabus of the PGEC has a Modular Structure  
**Duration:** 22 weeks on average

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<th>I. Review of Fundamentals</th>
<th>VII. Planned Exposure Situations – Occupational &amp; public exposure</th>
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<td>IX. Emergency Exposure Situations</td>
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<td>IV. International System of RP – Regulatory Framework</td>
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<td>XI. Training the Trainers</td>
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<td>VI. Planned Exposure Situations – Generic Requirements</td>
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Course Content

**Syllabus:** The standard syllabus of the PGEC has a Modular Structure

**Duration:** 22 weeks on average

The syllabus is under revision to reflect the new IAEA Basic Safety Standards
Content

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Assessment and Evaluation Mechanisms

**Assessment**

A structured activity by which the knowledge and/or skills and/or attitudes of an individual are measured using one or more methods. Assessment is often conducted at the end of a training session or course to determine the extent to which trainees have met the training objectives.

**Evaluation**

A series of activities used to measure the adequacy and effectiveness of a training session, course or programme (Evaluation is of “things” in contrast to an Assessment which is used as a measure of individuals). Evaluation can be Once-Off, Periodic or Continuous, depending on the frequency of the activity.
Assessment and Evaluation Mechanisms

**Part I**
At least one (1) month before the start of the course

**Part II**
Just before the start of the course

**Part III**
At the end of each Part

**Part XI**
At the end of the course

**Project Work**
After the course [year(s)]

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**Assessment**

A.1 Pre-training course

B.1 Pre-training test

A.2 Part's knowledge verification (examinations)

B.2 Part's feedback questionnaire

A.3 Submission of the PW (report)

B.3 Presentation of the PW (ppt)

A.4 Evaluation

B.4 Follow-up questionnaire

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Assessment and Evaluation Mechanisms

At least one (1) month before the start of the course
- Pre-training course
- Pre-training test

Just before the start of the course
- Part I
- Part II
- Part III
- Part XI

At the end of each Part
- Part’s knowledge verification (examinations)
- Part’s feedback questionnaire
- Submission of the PW (report)
- Presentation of the PW (ppt)

At the end of the course
- Project Work
- Post-training test
- Follow-up questionnaire

After the course [year(s)]

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Pre-training course

Aims

• To refresh the knowledge of the participants on basic subjects to facilitate their attendance at the PGEC
• To get information on possible gaps in participants competence

Delivery

• On line, conducted by the Regional Training Centres through the CLP4NET platform:
  (+) Prompt availability of the results
  (-) Participants to be registered in the platform
  (-) All the participants need access to internet with related hardware (pc/laptop) in their home country

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Assessment and Evaluation Mechanisms

Pre-training course

A.1
Assessment and Evaluation Mechanisms

- **Pre-training course**
  - Pre-training test

- **Part I**
  - Part's knowledge verification (examinations)

- **Part II**
  - Part's feedback questionnaire

- **Part III**
  - Submission of the PW (report)

- **Part XI**
  - Presentation of the PW (ppt)

- **Project Work**
  - Post-training test

- **Follow-up questionnaire**

**Timeframes**

- At least one (1) month before the start of the course
- Just before the start of the course
- At the end of each Part
- At the end of the course
- After the course [year(s)]
Aims
To have an overall evaluation of the gain of knowledge

Delivery
At the Regional Training Centres through printed test
At least one (1) month before the start of the course

Just before the start of the course

At the end of each Part

At the end of the course

After the course [year(s)]

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Part I

Part II

Part III

.....

.....

Part XI

Project Work

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Pre-training course

Pre-training test

Part’s knowledge verification (examinations)

Part’s feedback questionnaire

Submission of the PW (report)

Presentation of the PW (ppt)

Post-training test

Follow-up questionnaire

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Assessment

Evaluation

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A.2

Part’s knowledge verification (exams)

**Aims**

To *evaluate participants’ knowledge and understanding* of the subject presented in each Part

**Delivery**

At the RTCs through:

- Printed test
  - Multiple choice questions
  - Open questions
  - Numerical problems

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**Average grade**

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ETRAP 2017, 30.5
Assessment and Evaluation Mechanisms

**Part I**
- At least one (1) month before the start of the course

**Part II**
- Just before the start of the course

**Part III**
- At the end of each Part
- ......

**Part XI**
- At the end of the course

**Project Work**
- After the course [year(s)]

**Assessment**
- Pre-training course
- Pre-training test

**Evaluation**
- Part's knowledge verification (examinations)
- Part's feedback questionnaire
- Submission of the PW (report)
- Presentation of the PW (ppt)
- Post-training test
- Follow-up questionnaire

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Aims
To collect participants’ (and lecturers’) feedback on the delivery of the Parts and on Lecturers’ performance

Delivery
At the RTCs through questionnaire

- Closed type questions regarding: the scope of the Part; its structure and duration; quality of the presentations / practicals, pedagogical methods
- Adequacy and quality of the facilities
- Strengths, weaknesses, suggestions …
At least one (1) month before the start of the course

Just before the start of the course

At the end of each Part

At the end of the course

After the course [year(s)]

Part I

Part II

Part III

.....

.....

Part XI

Project Work

Pre-training course

Pre-training test

Part's knowledge verification (examinations)

Part's feedback questionnaire

Submission of the PW (report)

Presentation of the PW (ppt)

Post-training test

Follow-up questionnaire

A.1

B.1

A.2

B.2

A.3

B.3

B.4
A.3 Submission of the PW (report and ppt)

Aims

• To evaluate participants’ capability to make use of the knowledge gained in the course to address a specific issue of radiation protection, relevant to the national / organisational contest

• To provide an opportunity to evaluate participants’ knowledge and understanding of the subject presented in the Module ‘Train-the-Trainees (TTT)’

Delivery

At the Regional Training Centres through:

• Provision by the participant of a written report on the work project

• Presentation of the work project
Assessment and Evaluation Mechanisms

- **Part I**
  - Pre-training course
  - Pre-training test
  - Part’s knowledge verification (examinations)

- **Part II**
  - Part’s feedback questionnaire
  - Submission of the PW (report)
  - Presentation of the PW (ppt)

- **Part III**
  - Post-training test

- **Part XI**
  - Follow-up questionnaire

- **Project Work**
  - At least one (1) month before the start of the course
  - Just before the start of the course
  - At the end of each Part
  - At the end of the course
  - After the course [year(s)]
Aims
• To evaluate the long-term impact of the course (*cold assessment*)

Reference
A. Luciani, J. Wheately S. Ticevic, *Impact evaluation of the postgraduate educational course in radiation protection and the safety of radiation sources (PGEC)*, ETRAP 2017
Assessment and Evaluation Mechanisms

Part I

At least one (1) month before the start of the course

Part II

Just before the start of the course

Part III

At the end of each Part

.....

.....

Part XI

At the end of the course

Project Work

After the course [year(s)]

Pre-training course

Pre-training test

Part’s knowledge verification (examinations)

Part’s feedback questionnaire

Submission of the PW (report)

Presentation of the PW (ppt)

Post-training test

Follow-up questionnaire

A.1

A.2

A.3

B.1

B.2

B.3

B.4

Assessment

Evaluation

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## Assessment and Evaluation Mechanisms

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Content

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Ensuring the Quality and Sustainability of the Course

The purpose of the meeting is to share experiences and good practices in the conduction of the PGEC Annual Meeting of the PGEC Directors

To provide advice to the Secretariat with respect to the implementation of the IAEA Strategic Approach 2011–2020 Annual Meeting of the IAEA Steering Committee on E&T in RTWS
Ensuring the Quality and Sustainability of the Course

Working on

- the **harmonization of the PGEC** among the RTCs:
  - Evaluation and assessment questionnaires and methods
  - Practical exercises
  - Project works

- the **blended learning approach**
  - CLP4NET platform

- The **national strategies on E&T** for radiation protection
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Conclusions

• The PGEC is systematically monitored and evaluated by both the RTCs and the IAEA.

• Further **harmonization** on the assessment and evaluation mechanisms among the RTCs is needed.

• The more effective use of the **blended learning approach** is desirable.
Thank you very much for your attention!