EUTEMPE-RX: High-level education for medical physicists in diagnostic and interventional radiology

What are we all about?

European:
• FP7 project supported by the EC
• European consortium
• Targeting European participants

Training and Education:
• Modular course programme
• High-level teaching of professionals

Medical Physics Experts:
• Topics related to medical physics
• Learning outcomes at the expert level (EQF level 8)

Radiology (‘RX’):
• Currently targeting medical physicists working with radiological systems

Practicalities

Course organization:
• No registration cost
• First module started December 2014, last module ends May 2016
• 9 out of 12 modules completed

Perfect participant group:
• ~25 mostly European participants, strong representation from new member states
• Gender balanced with diverse backgrounds
• Working in hospitals, industry or regulatory authorities

What is our X-factor?

• Course modules are stand-alone and can be followed independently
• Flipped learning: preparatory online phase before face-to-face phase → allows for high level face-to-face phase
• Modern teaching techniques in each module
• The programme targets EQF level 8: PhD level!

Online phase: ~40h/module

Goals:
• Preparing for the face-to-face phase
• Creating a homogeneous participant group

E-learning platform: SEKOIA
• Book structure: (sub)chapters and pages
• Online questioning + follow-up of answers
• Online forum

Online material:
• Standard text pages
• Uploaded powerpoints, word/excel/pdf-files, images
• Audiofiles: powerpoints with audio animations
• Videos: knowledge clips, web lectures, screencasts

Not everything is done on the e-learning platform:
• Web meetings: discuss course content, assessment, etc.
• File sharing: not trivial through e-learning platform
• Users’ group: keep the group together!

Face-to-face phase: ~40h/module

Goals:
• Transferring knowledge, skills and competences that cannot be transferred online.

Teaching methods:
• Conventional lectures
• (Computer) exercises
• (Panel) discussions
• Demonstrations
• Workshops
• Excursions
• Student presentations

Examination:
• Oral/written
• Open/closed book
• Multiple choice, open questions, etc.
• Practical exercise
• At-home assignment
What does a lesson look like?

**ONLINE PHASE**

- Guided measurement session: implementing a document they created in an earlier group assignment.

**FACE-TO-FACE PHASE**

- Discussing the results of the measurement session in smaller groups + preparing a presentation about these results.
- Conventional lecture followed by questions from the participants.
- Social activity: relax!

**Wednesday 11/11**

- Morning: GASTHUISBERG (auditorium Louvre is also available)
  - 11h00-11h30: Practical in X-ray rooms in 3 groups: test your new QA protocol and improve it
    - Group 1: Meet at the entrance of the hospital → go to St-Rafael Hospital in the city center
    - Group 2: Meet at the entrance of the hospital
    - Group 3: Meet at the staff kitchen
  - 11h30-12h30: Improve your QA protocol

- Afternoon: AUDITORIUM LOUWRE
  - 14h00-14h45: Discuss the new protocols with all the groups
  - 15h45-16h15: Coffee break
  - 16h15-17h00: Results of a recent comparative study of dosimeters (W. Burelmen)
  - 17h00-17h30: Competition: find the best hint and trick for QA (moderator: H. Bessens)

Participants present hints & tricks they find useful in their daily practice. This was an assignment given during the online phase. The best hints get a prize!
What about the future?

**Future of the course**

The EC-support ends at the end of the first run of the EUTEMPE-RX modules (2016).

Is the demand high enough to continue without external funding?  **YES**

Are the participants willing to pay for the course modules?  **YES**

Survey question: How much would you be prepared to pay in the future for a similar course (including both the e-learning and face-to-face parts)?

Are the courses of sufficient quality to organize them again?  **YES**

Survey question: How likely is it you would recommend the EUTEMPE-RX course to a colleague?

**Online phase**

**Positives:**
- Possible to combine with a full-time job.
- Can be completed at the participants’ own pace.
- Well structured and complete course content.
- Professional and clean appearance.

**Negatives:**
- The e-learning platform lacked some features that were vital for our project.
- The time investment varied greatly between different students.
- Not all students took the online phase seriously.

**Face-to-face phase**

**Positives:**
- Practical organization: coffee breaks, facilities, social events, etc.
- Course content: complete, varied, up-to-date and well presented.
- Enthusiastic participants: good reviews in the participant surveys.

**Negatives:**
- EQF level 8 was not always reached, both for the content and for the examination.
- Often, too much theory was covered, the face-to-face phase should focus more on practical issues.
- Often, too much of the content of the online phase was repeated during the face-to-face phase.
- The participants did not start at the same level.

**Improvements**

- The online phase should be designed to force the students to take it seriously: locking certain sections until they completed a question, creating an online assessment session before the face-to-face phase, etc.
- A new e-learning platform should be chosen with the following features:
  - Better online forum
  - Tracking of student progress
  - Ability to lock sections until a task is completed
  - Ability to work with multiple teachers on one course module
  - Effective file-sharing
  - Greater stability (e.g. across browsers)
- The face-to-face phase should be designed to match the online phase perfectly. The focus should be on practical sessions and not repeating theory.

**Survey question:**
- How much would you be prepared to pay in the future for a similar course (including both the e-learning and face-to-face parts)?
- How likely is it you would recommend the EUTEMPE-RX course to a colleague?

**More information**

You can always contact me or visit the website!

[www.eutempe-rx.eu](http://www.eutempe-rx.eu)

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