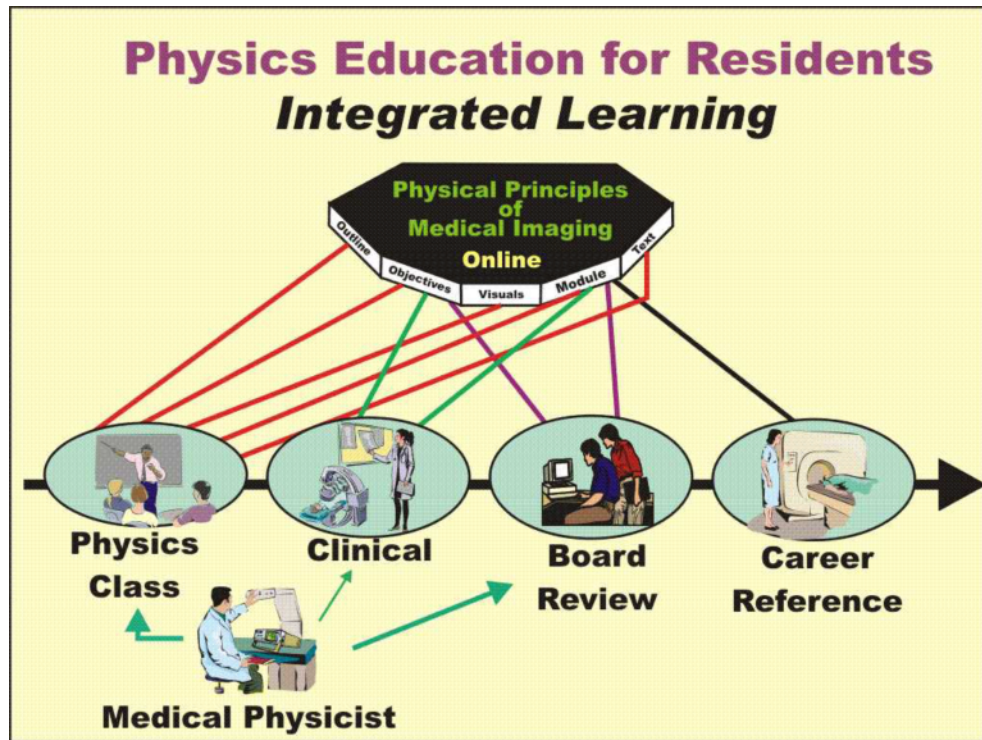


Radiology Resident Education
A Resource Model for Integrated Learning
<http://www.sprawls.org/resources>

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Introduction and Overview

The learning of the physics and technology of medical imaging by Radiology Residents is a multiple phase process. It generally begins with classes within academic programs and continues to include applied experience in the clinical environment, study and review for examinations, and continuous learning throughout a career.

The Physical Principles of Medical Physics Online (PPMPO)

<http://www.sprawls.org/resources> is designed as a resource to support each of these phases of learning. Its objective is to enhance the performance of learners (residents), learning facilitators (teachers), and practicing radiologists in the application of physical principles and a knowledge of the technology to effective and safe medical imaging.

It is a supporting resource for multiple teaching and learning methods including: classroom lectures, small-group collaborative learning, problem solving, laboratory and practical applications, continuing education and life-long learning, and as a general reference during various educational and clinical activities.

Resource Components

The PPMPO is a multi-faceted resource with components that are combined to support each of the learning phases. The specific components are:

- A Model Curriculum
- Topical Outlines
- Learning Objectives and Activities
- Visuals for Classroom and Conference Discussions
- Topical Modules for Individual Study and Reference
- Online Textbook

Classroom Learning and Teaching

The classroom provides an introduction to physics and technology in a generally organized structure. Several of the components support these classroom activities. The model curriculum can be adopted or modified to fit within a specific institutional academic program. All of the components can be used in the context of classroom teaching as determined by the on-site medical physics faculty.

Classroom lectures and discussions by on-site medical physics faculty are enhanced with the use of the visuals designed to enrich the learning environment. This fulfills one of the major needs leading to effective teaching. Visuals provide a window from the classroom into the world of physics and technology through which the faculty can guide the learning process and enrich it with personal experience and knowledge.

Laboratory and Clinical Applications

The direct application of physical principles and interactions with technology are essential to the development of knowledge that will support clinical imaging.

This occurs during structured laboratory investigations, simulations, and guided activities in the clinical environment. These activities can be guided by the Learning Objectives and Activities and used as an opportunity to review, reinforce, and apply concepts learned in the classroom and through self study.

The online modules are used during this phase as a reference and to integrate the various learning activities.

Review and Preparation for Examinations

It is assumed that the examinations evaluate competence in the general knowledge of medical physics and the application of this knowledge to applied clinical imaging. Therefore, the Learning Objectives and Activities and the Self-study Modules are useful for reviewing and preparing for examinations.

Continuing Education and Lifelong Learning

Continuing education and lifelong learning is critical to the application of physical principles to medical imaging because of rapid developments in imaging methods and technology. The fact that online modules can be quickly updated makes them appropriate resources for continuing education.

Documented continuing education is often required for maintaining professional credentials. Since the Learning Objectives and Activities and the Self-study Modules are open resources they are available to organizations for incorporation into accredited programs for testing and awarding credits.

Career Reference

The PPMPO is an open resource and readily available online throughout the world. Therefore it is a useful reference for professionals throughout their careers. It is of special value to educators and a source of information on specific topics to those in clinical practice.

Summary

The *Physical Principles of Medical Imaging Online* is being developed as a multi-faceted open resource to support the effective teaching and learning of the concepts and applications of medical physics and the optimum and safe use of imaging technology.