
Introduction

The faculty and staff of Nuclear Education Online (NEO) welcome you to a new and exciting educational opportunity. The mission of NEO is to provide nuclear education and training for health care professionals via an international distance education program of the highest caliber. We hope that you will become a life-long learner with us.

Mission

To provide nuclear education using the best practices in educational technology presenting:

- Content designed specifically for online distance education
- Processes that are interactive and learner-centered; and
- Problem based learning allow learners to become competent decision-makers

Values

- Integrity, honesty, trust, and fairness
- Responsible leadership and professional competency
- Learner-centered, student-driven, highly interactive, quality programs
- Creativity and diversity in people and thinking
- Customer service through collaborative partnerships



www.nuclearonline.org

Nuclear Education Online
4301 W. Markham, Slot 522
Little Rock, AR 72205
501-686-6398

Table of Contents

Introduction	i		
CHAPTER 1		CHAPTER 3	
Nuclear Education Goes Online	1	Curriculum	10
How Does The Program Operate?	1	Calendar	11
NEO History	2	Copyright Notice	11
NEO Faculty	3	ENROLLMENT	
Student Eligibility	3	FORM	
Computer Requirements	4		
Textbooks and Reference Materials	5		
Tuition	6		
CHAPTER 2			
What is Student-Centered Learning?	8		
WebCT	8		
Are You Ready for Distance Learning?	9		

Nuclear Education Goes Online

Distance education offers students the opportunity of career training with minimum disruption to their personal and professional lives.

The Nuclear Education Online (NEO) program is designed to provide the education and training required by the Nuclear Regulatory Commission (NRC) for a physician to be named as an authorized user on a radioactive materials human medical use license. The NRC mandates a minimum of 700 hours of training and experience for authorized users under section 35.290 (diagnostic or training for imaging and localization studies) and 35.390 (therapeutic, or training for unsealed byproduct material for which a written directive is required). Furthermore, the NRC specifies the minimum number of hours of classroom and laboratory training (didactic) to be 80 hours for 35.290 and 200 hours for 35.390. The NEO program consists of the 80-hour and 200-hour courses of didactic training through four modules: **Nuclear Physics, Nuclear Instrumentation, Radiation Biology & Radiation Protection, and Radiochemistry & Regulations.** Along with this didactic coursework, students will be required to complete the required experiential training as mandated by the NRC.

ICON KEY

 Valuable information

 Contact Us

 Internet Resources

How Does the Program Operate?

The NEO program provides a distance education program to the student. Distance education offers students the opportunity of career training with minimum disruption to their personal and professional lives. The NEO curriculum has been designed to include traditional educational and student-centered learning environments. The student is largely “in charge” of the learning process. Students have access to lecture notes, reading assignments, exams, and homework; similar to a traditional classroom. The difference is that the students can go through the modules and work at their own pace. The online learning environment places more responsibility on the student and requires self-discipline, but it also provides rewards through increased interactivity and scheduling flexibility. NEO provides

the 80-hour and 200-hour courses of classroom and laboratory training through four modules:

1. Nuclear Physics,
2. Nuclear Instrumentation,
3. Radiation Biology & Radiation Protection, and
4. Radiochemistry & Regulations.

Each module can be completed independently, offering maximum flexibility for residency programs. For example, one module could be assigned during each nuclear medicine rotation.

Each student has access to faculty content experts and instructors online, as well as a local preceptor on-site. The faculty will have overall responsibility for developing the student knowledge and skill base and for providing feedback to individual students and preceptors.

Of course, hands-on experiential training is very important as well. This component will be done at the hospital practice sites with the appropriate preceptors, to supervise and guide students through a structured experiential training program.

Nuclear Education Online History

In 1972, the University of New Mexico began teaching radiopharmacy courses and established the first commercial radiopharmacy, which then became the model for an entire industry. The University Of New Mexico and the University Of Arkansas College Of Pharmacy are two of just a handful of pharmacy schools nationwide that now offer nuclear education and training. Furthermore, the University Of Arkansas College Of Health Related Professions (CHRP) has been offering a Nuclear Medicine Technology distance education program via the Internet since 1998. Faculty from these three colleges came together in 1999 to form an educational consortium to expand specialty education and training beyond the walls of the universities. Each university and faculty member brings valuable experience and expertise to the NEO program.

Since the establishment of NEO in 2000, to deliver the didactic courses for Authorized User (AU) of Radioactivity training in an online format, NEO has trained over 300 nuclear pharmacists, technicians, and cyclotron workers. This training is accepted by the NRC and state agencies for the radioactive materials license.

NEO received a grant from the U.S. Department of Education to expand programs to offer AU training for physicians in an online format. This would provide a flexible schedule and eliminate the need for physicians to travel to receive this education.



NEO Faculty

We are proud to have excellent core teaching faculty members drawn from two universities: the University of Arkansas for Medical Sciences (UAMS) and the University of New Mexico (UNM). The Nuclear Education Online program is directed by John Pieper, Pharm.D., Dean of UNM College of Pharmacy and Stephanie Gardner, Pharm.D., Ed.D., Dean of the College of Pharmacy at UAMS. Faculty members include Nicki Hilliard, Pharm.D., BCNP; Dao Le, Pharm.D., BCNP; Jeff Norenberg, M.S., Pharm.D., BCNP; Martha Pickett, CNMT; Buck Rhodes, Ph.D.; Paul Thaxton, CNMT; Kristina Wittstrom, R.Ph., BCNP; and practicing radiopharmacist and cardiologist preceptors in the field. We also consult with the cardiology and radiology programs at UAMS. Biographical sketches and complete CVs of our faculty members may be found on the www.nuclearonline.org website.

Student Eligibility

The program is geared towards fellows/physicians who are seeking nuclear education and training. You are invited to evaluate the program description to determine if this program will meet your educational needs.

Computer Requirements and Recommendations

What Computer Equipment Do You Need?

We do not recommend any particular brand of computer, but we have developed a set of system requirements. It is the responsibility of the student to make sure that they have the necessary computer resources and skills needed to complete the NEO program. Students are not required to purchase their own computer, but **MUST** have access to the internet.

■ Internet Access:

The computer must be able to connect to the Internet and allow the student to browse the World Wide Web. High speed access is preferred.

Students can access the modules and print out the study materials to be studied off-line.

WebCT ID and Password

When you are enrolled in the program, you will be given a WebCT username and password that will allow you to access the course material.

Textbooks and Reference Materials



Much of the educational material is available online for the students. However, there are additional required and recommended textbooks. The list is posted online at www.nuclearonline.org and is included in the material sent to each student. Books may be purchased from an online or local bookstore. Be sure to order your textbooks in time to receive them before instruction begins.

Tuition

Participants	80 Hours	200 Hours
Fellows	\$2900	\$3900
Physicians	\$3900	\$6500

We are also offering volume discounts for residency programs. If you have five or more students from one program, there is a 15% discount per student. Furthermore, programs may enroll students in individual course modules for continuing education, or additional training.

The program fee is due upon enrollment; however, flexible payment schedules are available upon request.

What is Student-Centered Learning?

The goal is to provide an environment for active student-centered typical of the adult learning environment.

This chapter gives you additional information about online learning. You are encouraged to perform an honest self-assessment to determine whether you have the basic computer skills and self-discipline necessary to complete this program.

WebCT

WebCT (Web Course Tools) is a set of tools that facilitate the creation of sophisticated World Wide Web-based educational environments in three ways:

1. It provides students with a set of educational tools to facilitate learning, communication, and collaboration.
2. It provides instructors with an interface allowing the design of the presentation of the course.
3. It provides a set of administrative tools to assist the instructor in the process of management and continuous improvement of the course.

WebCT provides the tools necessary to facilitate the online learning experience including course material, discussion forums, chat, whiteboard, online testing, and more. For more information about WebCT, go to www.webct.com or visit our Nuclear Education Online Demo course found on the NEO website at http://www.nuclearonline.org/nuclear_education/courses/demo.asp 

Are You Ready for Distance Learning?

There are many advantages to learning in the online environment; however a distance education program is not for everyone. You are encouraged to think about your learning style considerations and technical requirements before committing to this program. You can find an example of a self-assessment quiz and “Getting Started” information in the demo course found on the program website (www.nuclearonline.org) in the “Online Courses” section.

Nuclear Education Online Curriculum

The goal is to offer physicians the best nuclear education and training program possible.

Online education and training for physicians has many advantages over traditional programs. Since this is a student-centered, active learning curriculum the learning process is enhanced. The asynchronous (anytime, anywhere) environment allows a great deal of flexibility for learners. Many students may be hesitant to leave home and family for an extended period of time in order to complete the education and training. The NEO program allows the instructors and learners to interact online without the inconvenience and expense of travel.

Program Curriculum

This program is modeled after the education and training requirements of the NRC. The NEO authorized user program for physician education and training program consists of the following components. It contains an 80 or 200 hour program of didactic education with an accompanying workbook. This workbook is intended to be used in conjunction with the didactic work. It will help the student to become familiar with different aspects of nuclear medicine. This hands-on training component of the program can be completed in the nuclear medicine department at the hospital or at a nuclear pharmacy. It must be used under the supervision of a preceptor, who is licensed to handle radioactive materials. For more program information, including objectives and syllabi please see the NEO website (www.nuclearonline.org).

Program Components

- Introduction to Nuclear Education Online
- Didactic Programs (80 or 200 hours)

- Nuclear Physics
 - Nuclear Instrumentation
 - Radiation Biology & Radiation Protection
 - Radiochemistry & Regulations
- Hands-on Workbook

Calendar

The Nuclear Education Online Training Program offers open enrollment. Students can begin the didactic and experiential material at anytime throughout the year.

To find out more about the Nuclear Education Online courses for your personal education or residency/fellowship program contact Nicki Hilliard at NLHilliard@uams.edu or Dao Le at dle@uams.edu.

Copyright Notice

The educational materials used in the Nuclear Education Online program are copyrighted and are not to be used for any purpose without the express, written permission of the faculty.

www.nuclearonline.org

Nuclear Education Online
4301 W. Markham, Slot 522
Little Rock, AR 72205
501-686-6398