INVEST TWO WEEKS TO INCREASE YOUR KNOWLEDGE OF NUCLEAR SECURITY

With nuclear and radiological materials poised to play a significant role in global plans to develop safe, clean, and affordable power, and in scientific and medical innovation, it is critical that facility designers, operators, and regulators understand foundational nuclear security. The Advanced Nuclear Security Summer Course at the University of New Mexico (UNM) provides a broad overview of advanced methodologies in an accelerated format, designed to fit into the schedules of early- and mid-career industry professionals and national laboratory technical staff, as well as nuclear engineering professors and graduate students who do not have the time to enroll in a full, two-year degree. The content and curriculum of this first session was developed by subject matter experts from Sandia National Laboratories and UNM, and will include the following:

▪ Advanced engineering approaches for designing and evaluating various aspects of nuclear security, including physical protection, material accountancy and control, and cybersecurity
▪ Current national and international policy, regulations, and governing bodies and their interaction with nuclear security performance
▪ Ongoing research and development in advanced security technologies, key policy areas, and changing threats

This program has support from the National Nuclear Security Administration’s Office of International National Security and is part of a memorandum of understanding signed in September 2020 between Sandia and UNM that outlines the UNM Nuclear Security Program’s development over the next five years. Future summer sessions will be re-evaluated to include more in-person, hands-on activities made impossible by current pandemic restrictions.

COURSE DETAILS
Level: Graduate; undergraduates in last year of engineering degree also eligible
Credits: 4 CEU
Dates: July 19-30, 2021
Times: Monday through Friday, 8:00 am to noon, MT
Location: Online
Registration and tuition details available soon

Contact Us
Contact INSinfo@nnsa.doe.gov
EXCELERATED CURRICULUM

- **Week One: Advanced Nuclear Security Theory & Practice**
  An advanced, comprehensive overview of the principles, concepts, technologies, and practices necessary for securing nuclear material and nuclear facilities, this course will address the entire nuclear fuel cycle, both domestically and internationally. Due to the broad nature of securing nuclear facilities and nuclear materials, a wide variety of aspects will be covered including physical protection systems, cybersecurity at nuclear facilities, unmanned aerial systems, as well as counter unmanned aerial systems and the link between facility security, safety and safeguards.

- **Week Two: Advanced Nuclear Security System Design & Analysis**
  An advanced, comprehensive study of the principles, concepts, technologies, and practices used in classic engineering design as applied to nuclear security systems. Specific design applications in this course will include traditional nuclear power plants, small modular reactors, research reactors, and fuel processing plants, in both domestic and international contexts. This course aims to emulate a typical engineer’s working environment in the nuclear security domain. Students will be exposed to interdisciplinary engineering methods to address problems with no closed-form solutions and to develop nuclear security designs.

PREQUISITES

The Advanced Nuclear Security Summer Course is designed for U.S. and international early- and mid-career security and engineering professionals, national laboratory technical staff, and university professors and graduate students. This fast-paced course features concentrated course materials with real-world applications. Non-traditional students will also be considered on a case-by-case basis.

FUTURE THIRD WEEK
ADVANCED NUCLEAR SECURITY SUMMER COURSE ADDS HANDS-ON EXPERIENCE

Due to the ongoing pandemic, the Advanced Nuclear Security Summer Course taught in 2021 will not include in-person training. It is expected that the 2022 course will include a third week of required, interactive training onsite at the renown Nuclear Security Technology Complex at Sandia National Laboratories in Albuquerque, New Mexico.

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