

Technical Underpinnings of Nuclear Nonproliferation.

Ten Week Course by David Albright and
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What is Nuclear Non-Proliferation

- The field of nuclear non-proliferation focuses on preventing the spread of nuclear weapons to new countries and terrorists.
- The field's legal basis involves multilateral treaties (Treaty on the Nonproliferation of Nuclear Weapons - NPT), regional treaties (Nuclear Weapon Free Zones), as well as multilateral and bilateral diplomacy, export controls, physical protection, safeguards, and military options, among many other aspects.
- The NPT divides between 5 nuclear weapon states (NWS) -US, Russia, FR, UK, China – and non-nuclear weapon states (NNWS).
- Over time, the field has expanded to include nuclear disarmament of states which did not sign the NPT (or withdrew from it) and developed nuclear weapons, or may have attempted to develop them as NPT states.

Purpose of this Course

- By its very nature, the subject matter of nuclear non-proliferation has many technical components.
- Understanding of the field (and on-going developments) is inhibited by a lack of knowledge of its basic technical aspects.
- This course seeks to provide a basic introduction to the technical underpinnings of nuclear non-proliferation.

Subjects will include

- Nuclear explosive materials,
- Nuclear reactor operation and plutonium production and separation,
- Uranium enrichment and highly enriched uranium production,
- Basics of nuclear weapons development,
- Illicit nuclear commodity trade, i.e. gaining the wherewithal to build nuclear facilities and weapons,
- Commercial satellite imagery applied to the study of nuclear facilities

The course will include many examples selected from the experiences of Iran, North Korea, South Africa, and Pakistan

Structure of Course

- The subjects will be taught in a series of modules; questions and discussion are welcome after the presentation of each module.
- Outside readings are encouraged; we will supply readings each week and Power Point slides from the previous week

Guest Speakers

- One or two sessions will be led by guest speakers
- What are your interests? Who to invite?