



The Abdus Salam  
**International Centre  
for Theoretical Physics**



**2374-21**

**Joint ICTP-IAEA School of Nuclear Energy Management**

*5 - 23 November 2012*

**IAEA Recommended List of M.Sc. Courses**

LAMBERT David  
*International Atomic Energy Agency, IAEA  
Wagramer Strasse 5, P.O. Box 100  
Vienna  
AUSTRIA*

# IAEA Recommended List of M.Sc. Courses

## Prerequisite courses

- NS.PR1. Applied mathematics
- NS.PR2. Basic nuclear physics

## Required courses

- NS1. Introduction to nuclear security
- NS2. International and national legal framework regulating nuclear security
- NS3. Nuclear energy, nuclear fuel cycle and nuclear applications
- NS4. Methods and instruments for nuclear and other radioactive material measurements
- NS5. Effect of radiation, safety and radiation protection
- NS6. Threat assessment
- NS7. Physical protection systems design and evaluation
- NS8. Physical protection technologies and equipment
- NS9. Security of nuclear and other radioactive material in transport
- NS10. Detection of criminal or unauthorized acts involving nuclear and other radioactive material out of regulatory control
- NS11. Interdiction of, and response to, criminal or unauthorized acts involving nuclear and other radioactive material
- NS12. Crime scene investigation and forensic techniques

# IAEA Recommended List of M.Sc. Courses

## Elective courses

- NS13. Nuclear material accountancy and inventory control of other radioactive material
- NS14. Vulnerability assessment of physical protection systems
- NS15. Risk assessment and management of State nuclear security measures
- NS16(a). Physical protection systems for nuclear and other radioactive material, sources and facilities
- NS16(b). Physical protection systems for radioactive material and sources
- NS17. Import/export and transit control mechanism and regime
- NS18. Nuclear security at major public events
- NS19. Nuclear forensics and attributions
- NS20. Infrastructure and procedures for detection and response to incidents involving nuclear or other radioactive material out of regulatory control
- NS21. Cooperation of stakeholders at national and international level
- NS22. IT/cyber security

# Textbooks Development

## supported by IAEA

### Current Status

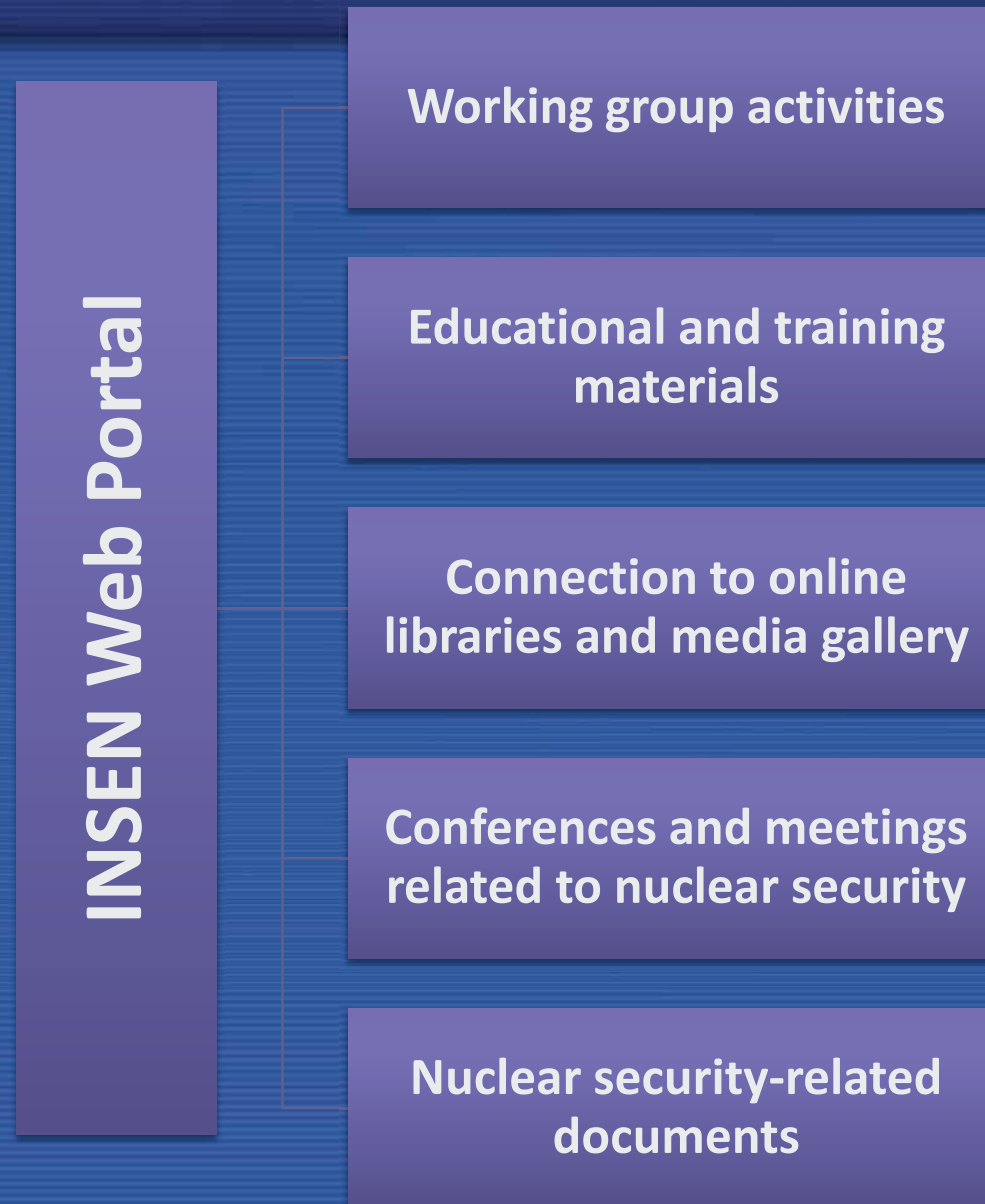
- **NS1. Introduction to nuclear security (under peer review)**
- **NS2. International and national legal framework regulating nuclear security**
- **NS3. Nuclear energy, nuclear fuel cycle and nuclear applications (Publication in Russian available)**
- **NS4. Methods and instruments for nuclear and other radioactive material measurements (Publication in Russian available)**
- **NS5. Effect of radiation, safety and radiation protection**
- **NS6. Threat Assessment**
- **NS7. Physical protection systems design and evaluation**
- **NS8. Physical protection technologies and equipment (under development)**
- **NS9. Security of nuclear and other radioactive material in transport (under peer review)**
- **NS10. Detection of criminal or unauthorized acts involving nuclear and other radioactive material out of regulatory control**
- **NS11. Interdiction of, and response to, criminal or unauthorized acts involving nuclear and other radioactive material**
- **NS12. Crime scenes investigation and forensic techniques**
- **NS22. IT/Cyber Security (peer reviewed)**

# Teaching Material development supported by IAEA

## Current Status

- NS1. Introduction to nuclear security (**finalization**)
- NS2. International and national legal framework regulating nuclear security (**completed**)
- NS3. Nuclear energy, nuclear fuel cycle and nuclear applications (**completed**)
- NS4. Methods and instruments for nuclear and other radioactive material measurements (**peer review Q3 2012**)
- NS5. Effect of radiation, safety and radiation protection (**completed**)
- NS6. Threat Assessment (**peer review Q4 2012**)
- **NS7. Physical protection systems design and evaluation (completed)**
- NS8. Physical protection technologies and equipment (**peer review Q4 2012**)
- NS9. Security of nuclear and other radioactive material in transport (**completed**)
- NS10. Detection of criminal or unauthorized acts involving nuclear and other radioactive material out of regulatory control (**completed**)
- NS11. Interdiction of, and response to, criminal or unauthorized acts involving nuclear and other radioactive material (**under development**)
- NS12. Crime scenes investigation and forensic techniques (**being initialized**)
- NS22. IT/Cyber Security (**peer review in Q4 2012**)

# Nuclear Security Portal (NUSEC)



# NSSCs Around the World

- IAEA Pilot Support
  - Morocco
  - Ghana
  - Pakistan
  - Tanzania
  - Malaysia
  - Colombia
- Missions Completed or Scheduled
  - Jordan, Kenya, Brazil, Argentina, Chile, Cuba, Turkey, South Africa, Nigeria
- Planned
  - Kazakhstan, Philippines

Good examples of “integrated interest”