

INTERNATIONAL CBRNE MASTER COURSES SERIES

COLLANA DI SICUREZZA CHIMICA, BIOLOGICA, RADIOLOGICA E NUCLEARE

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Peace cannot be kept by force; it can only be achieved by understanding.

Albert EINSTEIN

The CBRNe Book Series was born as an initiative of the Directive Board and of the Scientific Committee of “International Master Courses in Protection Against CBRNe events” (www.mastercbrn.com) at the University of Rome Tor Vergata. The evolution and increase in Security and Safety threats at an international level place remarkable focus on the improvement of the emergency systems to deal with crisis, including those connected to ordinary and non-conventional events (Chemical, Biological, Radiological, Nuclear, and explosives). In every industrial Country there are multiple entities with specialized teams in very specific fields, but the complexity of the events requires professionals that not only have specific know-how, but also expertise in the entire relevant areas. Given the global interest in these issues, the Department of Industrial Engineering and the Faculty of Medicine and Surgery of the Tor Vergata University organize the international Master Courses in “Protection against CBRNe events”: I Level Master Course in “Protection against CBRNe events” (120 ECTS) and II Level Master Course in “Protection against CBRNe events” (60 ECTS). These courses aim at providing attendees with comprehensive competences in the field of CBRNe Safety and Security, through teaching and training specifically focused on real needs. Both Master Courses are designed according to the spirit of the Bologna Process for Higher Education, the Italian law and educational system. The Master Courses are organized also in cooperation with the following Italian Public Entities:

- Presidenza del Consiglio dei Ministri (Prime Minister’s Office);
- Ministero della Difesa (Ministry of Defence);
- Ministero dell’Interno (Ministry of The Interior);
- Istituto Superiore di Sanità (National Health Institute);
- Istituto Nazionale di Geofisica e Vulcanologia (National Institute for Geophysics and Vulcanology);
- ENEA (Italian National Agency for New Technology, Energy and Sustainable Economic Development);

- University Consortia CRATI, MARIS and SCIRE;
- Comitato Parlamentare per l’Innovazione Tecnologica (Parliamentary Committee for Technological Innovation).

And together with the following International Entities:

- OPCW (Organization for the Prohibition of Chemical Weapons)
- NATO Joint Centre Of Excellence (Czech Republic);
- NATO SCHOOL of Oberammergau (Germany);
- HotZone Solutions Group (The Netherlands);
- VVU–026 Sternberk (Czech Republic);
- Seibersdorf Laboratories GmbH (Austria);
- Chernobyl Centre (Ukraine).

All the above–mentioned organizations have signed official cooperation agreements with the University of Rome Tor Vergata in the aim of Master course activities. The Master have also cooperation with OSCE, IAEA, ECDC, KEMEA in the aim of the didactical activities and we are working to formalize this collaboration with a formal cooperation agreement.

Both Master Courses have been officially granted the “NATO selected” status and have been included in the NATO Education and Training Opportunities Catalogue (ETOC) and also they are supported by OPCW.

The purpose of the CBRNe book series is to give a new perspective of the safety and security risks from both a civil and military point of view, touching all the aspects of the risks from the technological to the medical ones, talking about agents and effects, protection, decontamination, training, emergency management, didactic, investigation, communication and policy.

The authors will be experts of the sector coming from civil, military, academic/research and private realities. A special thanks for the realization of this series goes to Prof. Carlo Bellecci for his initial encouragement, continuous support and help.

Nel mese di Agosto 2016 il Ministero dell’Istruzione, dell’Università e della Ricerca (MIUR) ha inserito la collana nella lista di quelle ufficialmente riconosciute con i seguenti riferimenti:

- codice di classificazione: E237557;
- titolo: CBRNE BOOK SERIES.

During the month of August, 2016, the Italian Minister for Instruction, University and Research (MIUR) has officially added this book series in the list of the official publications recognized by the Minister itself with the following references:

- classification code: E237557;
- title: CBRNE BOOK SERIES.

Ahmed Gamal Ibrahim

Improvement on CBRNe Learning & Education Management

A study on the CBRNe Master Courses weak points equal
Identification from Theoretical, Operational
and Administrative approach





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Nomenclature

CBRNe	Chemical, Biological, Radiological, Nuclear and Explosives
WMD	War of Mass Destruction
CWA	Chemical Warfare Agents
LAT	Live Agent Training
IED	Improvised Explosive Devices
EOD	Explosives Ordnance Disposal
ADDIE	Analysis, Design, Development, Implementation, and Evaluation
SRPG	Standing Chemical, Biological, Radiological and Nuclear Planning Group
NFPA	National Fire Protection Association
INMAS	Institute of Nuclear Medicine and Allied Sciences
AFINBCP	AF Institute of NBC Protection
IAEA	International Atomic Energy Agency
OPCW	Organisation for the Prohibition of Chemical Weapons
NATO	North Atlantic Treaty Organization
SPSS	Statistical Package for the Social Sciences

Thesis objectives

This paper is going to discuss different topics that related to the original concept which target to Improve the CBRNe Master courses and the challenges between the academic and the operating discipline within it according to the following subjects:

- a) what is the evaluations Analysis statics telling us?

The student's evaluations and their main comments will lead us to find out how the CBRNe master's Degree can be improved to facilitate efficiency in both academic and the practical field;

- b) which kind of improvements would enhance the level of knowledge?

According to the evaluation, the suggested improvements should pour to help the knowledge transformation process for the Master Program for the First Responders, ease the learning process and develop an improved academic level for the students through the CBRN master's Degree;

- c) what are the Instructors recommended minimum qualifications?

For the Trainers, Instructors and experts who are going to deliver the Courses, or the operational Training, they should excel some Educating skills or qualifications that match the nature of the courses delivery, either classroom lectures or operational exercises on the field;

- d) how can an E-Learning Platform for the basic courses lead to a harmonised knowledge?

For the CBRNe main principles, it is recommended to have some fundamental classes on chemical, biological, radiological, nuclear and explosives as well as on the underlying operations like protection, detection, decontamination and sampling. This fundamental knowledge eases the process of learning for the international students and guarantee a harmonised level of ex-

perience and make them having basic knowledge when coming to the classes at the university;

- e) why is it Essential to go through Live Agent Training?

The chemical warfare agents, Biological agents, Radioactive open and closed sources, visits of nuclear power plants and understanding the process of nuclear energy with its pros & cons, and getting a better understanding on the explosives and how it would affect as a mass destruction when it is used combined with any CBR element to form an Improvised Explosive Devices IED is a crucial element to have a reliable experienced First Responder;

- f) what are the changes on the 2018 Master program on the syllabus?

The Modules schedule and content for 2018 Program changes will solidify the program and lead it to a higher level of perfection in knowledge sequence according to the ADDIE model which is the process used by instructional training developer and include five phases — Analysis, Design, Development, Implementation, and Evaluation — which represent a dynamic, flexible guideline for building effective training and performance support tools for the whole CBRNe Master Modules;

- g) what are the other elements that the Didactic Board need to take into consideration to raise the international awareness towards the CBRNe Hazards?

They can achieve more by spreading the awareness either through a new safety and security Inbound Marketing strategy, conferences and exhibitions presence or with a new institutional arm. This arm could then support in all the aspects not related to the academic studies directly but will enhance the CBRNe presence globally (*networking*).