
ОРГАНІЗАЦІЯ ВИРОБНИЦТВА, МЕНЕДЖМЕНТ. ЕКОНОМІКА ПІДПРИЄМСТВА

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Kupalova G.I., Zanders Jean Pascal ^{a)}, Gura V.L., Boguslavskyy O.V.

AN EXPERIENCE OF IMPLEMENTING NEW MASTER PROGRAMME «ECONOMIC SECURITY OF ENTREPRENEURSHIP» INTO THE EDUCATIONAL PROCESS OF THE TARAS SHEVCHENKO NATIONAL UNIVERSITY OF KYIV

Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

^{a)} Advisory Board on Education and Outreach (ABEO) of the Organisation for the Prohibition of Chemical Weapons (OPCW), Fondation pour la recherche stratégique in Paris, France

The purpose of the article is to study the main directions and prospects for the introduction of CBRN knowledge into the higher education system in Ukraine. A relatively small number of publications in scientometric databases in comparison with other more widely presented topics are devoted to the issues of teaching and informing about CBRN threats and risks. At the same time, questions related to the implementation of the CBRN Education in universities in the field of economic security remain not fully studied. New Master Programme «Economic Security of Entrepreneurship» can play a significant role in the formation of education for sustainable growth. This Programme is one of the elements of the «Targeted Initiative CBRN Export Control on Dual-Use Materials and Intangible Technologies in GUAM Countries» which began in January 2018. As part of the preparatory work for the Programme, many trainings were organized by the Science and Technology Center in Ukraine for teachers, partners, professionals and future students. Particularly teachers of the Faculty of Economics trained at many international trainings, including: 1) Seminar on Export Control of Dual-use Materials and Technologies in GUAM 2018, Kyiv, Ukraine; 2) Seminar on the Challenges of the Scientific and Technological Evolution for the Export Control Systems, Tbilisi, Georgia, etc. First, the New Graduate Professional Degree Programme «Economic Security of Entrepreneurship» was implemented at the Department of Entrepreneurship in 2018–2019 study year, today this Programme continued to be implemented at the Department of Environmental Management and Entrepreneurship of the Taras Shevchenko National University of Kyiv till now. This year (2021) was the first graduation of masters for this program. The New Master Programme «Economic Security of Entrepreneurship» is of great interest to applicants and working professionals with a view to future entry in future academic year.

Keywords: CBRN education, Export Control on Dual-Use Materials, Economic Security of Entrepreneurship.

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Problem statement

«Goal 16. Peace, justice and strong institutions» is one of the 17 the United Nations Sustainable Development Goals (SDGs) [1]. This goal aims to «significantly reduce all forms of violence, and work with governments and communities to end conflict and insecurity» [1]. One of the programmes at the

European Union level that contributes to the achievement of this goal is «EU P2P export control programme for dual use goods» [2]. Examples of cooperation under this program include train-the-trainer seminars, exchange of good practices, case studies, tabletop exercises, [2] among other things.

A different EU initiative are the Targeted

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An experience of implementing New Master Programme «Economic Security of Entrepreneurship» into the educational process of the Taras Shevchenko National University of Kyiv

Initiatives to encourage partner countries to set up and enforce effective export controls, on the one hand, and engage the academic community in preventing misuse of CBRN-relevant dual-use technologies, on the other hand. A project example of the latter objective is the new Master's degree interdisciplinary Programme «Economic Security of Entrepreneurship» at the Faculty of Economics of the Taras Shevchenko National University of Kyiv. It forms part of the «Targeted Initiative CBRN Export Control on Dual-Use Materials and Intangible Technologies in GUAM Countries», which began in January 2018[3] and is implemented through the Science and Technology Center in Ukraine (STCU).[4]. The Master's course contributes to the overall objectives of the EU Targeted Initiative, namely education and training about risks posed by dual-use technologies that could be misused for the development and acquisition of chemical, biological, radiological and nuclear (CBRN) weapons for students and export control practitioners, and building risk awareness about intangible technology transfers among academics. Economic security of entrepreneurship is part of national security, considering that enterprises produce goods usable both for civilian and military purposes.

Analysis and research of publications

A relatively small number of publications in scientometric databases in comparison with other more widely presented topics are devoted to the issues

of teaching and informing about CBRN threats and risks. In particular, in the scientific-metric database of the Web of Science, according to the search criteria «CBRN» and «Education», you can find several dozen articles. They were written in 2005-2021 and deal with various aspects of the study of CBRN education and security.

The article publication statistics for these search criteria is displayed in Table.

For example, the article «Recommendations for improving public engagement with pre-incident information materials for initial response to a chemical, biological, radiological or nuclear (CBRN) incident: A systematic review» written Carter, H; Drury, J; Amlot, R is devoted to: «...examine potential efficacy of pre-incident information campaigns for improving public preparedness for CBRN incidents; identify what information should be included within public preparedness campaigns for CBRN incidents; and identify the best method(s) of providing pre-incident information for CBRN incidents. aimed to: examine potential efficacy of pre-incident information campaigns for improving public preparedness for CBRN incidents; identify what information should be included within public preparedness campaigns for CBRN incidents; and identify the best method(s) of providing pre-incident information for CBRN incidents» [5].

In turn, The article Hu, X; Chen, H; Yu, M «Exploring the non-technical competencies for on-

Authors, year of publication, according to the search criteria «CBRN» «education» in the scientific database of the Web of Science

Authors	Publica-tion Year	UT (Unique WOS ID) WOS:
Guarrieri, TR; Meisel, CJ	2021	000502659500001
Carter, H; Drury, J; Amlot, R	2020	000599710700004
Hu, X; Chen, H; Yu, M	2020	000541371500008
Eyison, RK; Pakdemirli, A; Aydin, E; Ozturk, AS; Kilic, Z; Demirbag, B; Ortatatli, M; Sezigen, S; Kenar, L	2020	000533600300016
Aminizadeh, M; Farrokhi, M; Ebadi, A; Masoumi, GR; Kolivand, P; Khankeh, HR	2019	000614890800023
Kako, M; Hammad, K; Mitani, S; Arbon, P	2018	000434291900012
Otrisal, P; Pikner, I	2018	000464906100081
Djalali, A; Della Corte, F; Segond, F; Metzger, MH; Gabilly, L; Grieger, F; Larrucea, X; Violi, C; Lopez, C; Arnod-Princ, P; Ingrassia, PL	2017	000408580200010
Schroder, H; Zoremba, N; Rossaint, R; Deusser, K; Stoppe, C; Coburn, M; Rieg, A; Schalte, G	2016	000374052300087
Gouweloos, J; Duckers, M; te Brake, H; Kleber, R; Drogendijk, A	2014	000341470300007
Greunig, D; Jurgens, C; Oppermann, S	2013	000318248300003
Stolar, A	2012	000350555500006
Kollek, D; Welsford, M; Wanger, K	2009	000269255100005
Rainer, K; Sturm, N; Schonhacker, S; Chroust, G	2009	000274283000034
Chaput, CJ; Deluhery, MR; Stake, CE; Martens, KA; Cichon, ME	2007	000249958600016
Eisenman, DP; Stein, BD; Tanielian, TL; Pincus, HA	2005	000230601900020

Source: compiled by the authors on the basis of the above criteria for searching the Web of Science database [5].

scene public health responders in chemical, biological, radiological, and nuclear emergencies: a qualitative study» was aimed «...to to define and delineate specific non-technical competencies for first-line public health responders in Chemical, Biological, Radiological, and Nuclear (CBRN) emergencies in China» [6]. These authors identified 8 domains of non-technical core competencies: «...(1) situation awareness, (2) communication skills, (3) collaboration, (4) resource management, (5) task management, (6) cultural competency, (7) austere environment skills, and (8) physical stamina» [6].

Part of the articles presented in the table are aimed at specific practical issues, such as Schroder, H; Zoremba, N; Rossaint, R; Deusser, K; Stoppe, C; Coburn, M; Rieg, A; Schalte, G «Intubation performance using different laryngoscopes while wearing chemical protective equipment: a manikin study» [7].

Detailed study of CBRN Education and Training for Health Professionals is made in the article «Existing Approaches to Chemical, Biological, Radiological, and Nuclear (CBRN) Education and Training for Health Professionals: Findings from an Integrative Literature Review» by Kako, Mayumi & Hammad, Karen & Mitani, Satoko & Arbon, Paul (2018) [8]. This article, in particular, highlighted various Training Delivery Modes for health care professionals [8].

At the same time, questions related to the implementation of the CBRN Education in universities in the field of economic security remain not fully studied.

Purpose of the article

The purpose of the article is to study the main directions and prospects for the introduction of CBRN knowledge into the higher education system in Ukraine, as well as to consider the best practices of implementing The Programme «Economic Security of Entrepreneurship» at the Faculty of Economics of the Taras Shevchenko National University of Kyiv.

Research methods: scientific abstraction, synthesis, comparative analysis of publications in the field of CBRN security, analysis of prospects for the development of The Programme «Economic Security of Entrepreneurship» in Ukraine.

Statement of the main material

The Programme «Economic Security of Entrepreneurship» is an example of a state-of-the-art innovative educational programme typical for the European Union. Designed in line with economic education requirements pertaining to management and administration, it combines new learning methods and techniques specific to Programme topic.

This graduate programme is especially relevant because of the new ways in which technologies are

nowadays researched, developed and produced, and the ways in which such novel technologies may be exploited for weapon development or use. Moreover, decision-making and oversight of how dual-use goods are transferred and applied has also become more complicated because of the rise of different types of new security actors. In addition to national governments, international treaties and organisations also acquire regulatory authority. Industries and professional organisations organise themselves in international associations, which also increasingly inform and guide their members in security-related matters. Finally, individual companies and even persons also have increasing responsibilities in preventing the misuse of their technologies for hostile purposes, especially by terrorists or criminals. Management of dual-use technologies in an entrepreneurial setting requires people with new types of knowledge, risk awareness and experience, and skill sets. Ukraine therefore has an acute need for trained professionals in CBRN-relevant security and export control.

CBRN security is an aggregate of varied measures to prevent proliferation and control of circulation of chemical, biological, radiological and nuclear goods and technologies.

Export control is an indispensable part of trade and entrepreneurship, covering import, export and transit of goods and technologies. This requires compliance with the rules of economic security and sustainable development of enterprises and their operation within both international and national legal frameworks.

Future enterprise security professionals will be able to tackle effectively the organisation and conduct of export control over dual-use goods and technologies; they will become experts in improvement of the CBRN threat proliferation prevention systems.

Programme outline: Major course – 076 Private Enterprise, Trade and Stock Exchange. Master's degree, extramural programme, 90 ECTS credits, 1 year and 5 months.

The main Programme goals are:

– provide education in entrepreneurship, trade and stock exchange with good access to professional career;

– train professionals in private enterprise, trade and stock exchange who will possess modern economic outlook and management thinking,

– have theoretical knowledge and practical skills as required to address research and management tasks and problems related to operation and development of private enterprise, trade and exchange activity.

Discipline: province of knowledge: Management and Administration, major speciality: Entrepreneurship, Trade and Stock Exchange,

programme: Economic Security of Entrepreneurship.

Programme characterisation is Interdisciplinary approach to CBRN safety and security through involvement of professors from different departments such as chemistry, radiation physics, electronics and computer systems (DRECS), Institutes of High Technology and Law.

First, the New Graduate Professional Degree Programme «Economic Security of Entrepreneurship» was implemented at the Department of Entrepreneurship of the Faculty of Economics in 2018-2019 study year [4]. Then, after the reorganization of the Department of Entrepreneurship and its accession to the Department of Environmental Management and Entrepreneurship in February 2020 this Programme continued to be implemented at the Department of Environmental Management and Entrepreneurship of the Taras Shevchenko National University of Kyiv till now [9].

The main partners and organizers of the Programme into the Taras Shevchenko National University of Kyiv are:

- Institute of Law: disciplines related to legal regulation of CBRN goods and technologies,
- Department of Chemistry: disciplines related to chemical goods, technologies and applications,
- DRECS: disciplines related to radiological and nuclear goods, technologies and applications,
- Institute of High Technology: disciplines related to biological goods, technologies and applications.

Close cooperation has been established with international experts (via the Science and Technology Centre for Ukraine and the European Commission).

Internship is a compulsory element of the course. The best students can have their internships abroad (at the University of Liège, Belgium). The organization of internships in various Ukrainian universities continues.

Part of the disciplines are taught in English. The list of the disciplines support the orientation towards knowledge, skills and abilities needed to exercise systematic approach in finding effective ways to address economic security of entrepreneurship and export control issues and to build required professional expertise. Specifically, the disciplines within the course include Basic Knowledge of CBRN, Legal Governance of Economic Security, Globalisation Challenges, Global Trade Regimes, Export Control of Dual-Use Goods and Technologies, Responsible Behaviour of Entrepreneurs, Customs Security, Dual-Use Goods and Technologies Expert Assessment and Certification, Cyber Security etc.

For example, Basic knowledge about CBRN – is a discipline which covers main CBRN concepts,

principles, CBRN international treaties, describes the armament and disarmament processes, CBRN risks and responsibilities. Course objective is to form in students“ Basic knowledge about CBRN and raising awareness of risks relating to tangible and intangible transfers of Dual-Use technologies. This course examines CBRN international threats, introduces basic CBRN concepts and criteria, describes the technology transfers processes and shows CBRN main international treaties [10].

The relevance of this Programme is based on the need for qualified professionals in management and administration who, besides fundamental training, will have profound knowledge and practical skills in export control of dual-use goods and technologies. The principal advantage of the Programme is its ability to train future specialists capable of research activity, conversant in the dynamically evolving entrepreneurial environment, proficient enough to claim professional success in strategic areas of development of private enterprise, trade and stock exchange and to make and implement effective management decisions to support economic security of entrepreneurship. There are currently no educational programmes in Ukraine meeting the need for dual-use export control analysts.

The existing educational Programmes offer no interdisciplinary courses (for example, political sciences, economics, international and national laws etc.) to meet comprehensively current need for knowledge of the economic security of entrepreneurship, that includes export control of dual-use goods and technologies, to satisfy the employers.

Monitoring of the Ukrainian labour market performed by our chair revealed abundant vacancies of economic analysts and customs brokers whose required expertise is not supported by existing graduate programmes. Therefore, the labour market needs a labour pool both for the Ukrainian government management and administration function and for private entities seeking CBRN security analysts and professionals in dual-use control. Future graduates may be employed at consultative, advisory and other roles at different levels of the government to support implementation of projects of expert analyses having different degrees of complexity, and at the private sector companies. Being first in Ukraine to focus the existing programme in economic security of entrepreneurship on the requirements of the contemporary labour market we may anticipate positive feedback from, and cooperation with, a broad circle of enterprises and government agencies.

No individuals or legal entities have legitimate rights, depend on, or may influence the content of this educational Programme.

The implementation of the Programme began



Fig. 1. During the presentation of the Programme «Economic Security of Entrepreneurship»

with preparatory administrative work and the presentation of this Programme (Fig. 1) in the Red Building of the Taras Shevchenko National University of Kyiv [11].

As part of the preparatory work for the Programme, many training events were organized by the Science and Technology Center in Ukraine for teachers, partners, professionals and future students. Particular teachers of the Faculty of Economics received training at many international seminars and workshops, among them:

- «Seminar on Export Control of Dual-use Materials and Technologies in GUAM. March 14–15, 2018, Kyiv, Ukraine;
- Seminar on the Challenges of the Scientific and Technological Evolution for the Export Control Systems. 15-16 October, Tbilisi, Georgia;
- STCU Spring University on Export Control for the GUAM Countries, 20–24 May 2019, Kyiv, Ukraine;
- Conference on Nonproliferation and Dual-

use awareness, 29-30 August 2019, Ypres, Belgium» [3].

After the implementation of all registration procedures in 2019, university admission campaign took place on this Programme and students began to study.

The first lectures from the Belgian professor Jean Pascal Zanders began successfully at the University on October 21, 2019. He conducted a series of lectures on “Basic knowledge of CBRN” [12]. He also taught an advanced module on CBRN risks and threats. Three other Visiting Professors taught introductory and advanced modules on international law governing technology transfers; domestic regulatory, criminal and penal law to enforce export control regulations; and the governance of science and technology, including ethics.

In accordance with many wishes of applicants in the 2020-2021 academic year, extramural master program has started (Fig. 2).

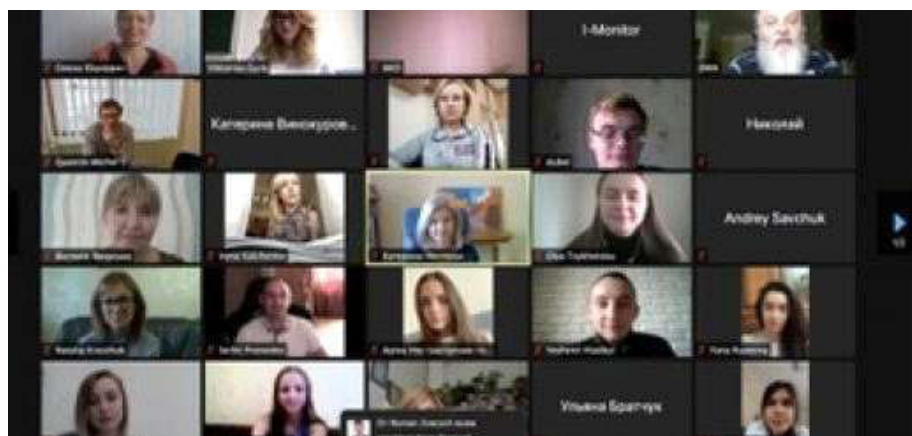


Fig. 2. Safe online learning process

This Programme has received a lot of positive feedback and significant interest for the upcoming 2021–2022 entrance campaign among professors from various universities and working professionals.

Conclusions

The New Master Programme «Economic Security of Entrepreneurship» can play a significant role in the formation of education for sustainable growth. It also contributes to establishing a culture of responsible behaviour that contributes to the prevention of proliferation of CBRN Weapons because participants will graduate with a higher level of risk awareness, which helps to detect malicious or fraudulent intent.

This Programme is one of the elements of the «Targeted Initiative CBRN Export Control on Dual-Use Materials and Intangible Technologies in GUAM Countries» which began in January 2018.

The launch of this Programme was successfully carried out at the Faculty of Economics of the Taras Shevchenko National University of Kyiv with the support and participation of partners from other faculties and institutions.

The Programme has aroused great interest in the scientific and educational environment of Ukraine and has significant prospects for development.

This year (2021) was the first graduation of masters for this program (Fig. 3).



Fig. 3. The first graduation of masters for the Programme «Economic Security of Entrepreneurship»

The New Master Programme «Economic Security of Entrepreneurship» is of great interest to applicants and working professionals with a view to future entry into the 2021–2022 academic year.

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ДОСВІД ВПРОВАДЖЕННЯ НОВОЇ МАГІСТЕРСЬКОЇ ПРОГРАМИ «ЕКОНОМІЧНА БЕЗПЕКА ПІДПРИЄМНИЦТВА» В НАВЧАЛЬНИЙ ПРОЦЕС КИЇВСЬКОГО НАЦІОНАЛЬНОГО УНІВЕРСИТЕТУ ІМЕНІ ТАРАСА ШЕВЧЕНКА

Купалова Г.І., Зандерс Ж.П., Гура В.Л., Богуславський О.В.

Метою статті є вивчення основних напрямів та перспектив впровадження РХБЯ-знань у систему вищої освіти в Україні. Порівняно невелика кількість публікацій у наукометричних базах даних у порівнянні з іншими більш широко надана темами, присвяченими питанням викладання та інформування про РХБЯ-загрози та ризики. У той же час питання, пов'язані із впровадженням РХБЯ-освіти в університетах у галузі економічної безпеки, залишаються не повністю вивченими. Магістерська програма «Економічна безпека підприємництва» може мати значне значення у формуванні освіти для сталого зростання. Ця програма є одним із елементів «Цільової ініціативи РХБЯ експортного контролю матеріалів подвійного використання та нематеріальних технологій у країнах ГУАМ», яка розпочалася у січні 2018 року. В рамках підготовчої роботи до Програми багатонаукових тренінгів було організовано Українським науково-технологічним центром (УНТЦ) для викладачів, партнерів, професіоналів і майбутніх студентів. Частина викладачів економічного факультету навчалися на багатьох міжнародних тренінгах, серед яких: 1) Семинар з експортного контролю за матеріалами та технологіями подвійного використання в ГУАМ 2018, Київ, Україна; 2) Семинар про великі наукової та технологічної еволюції систем експортного контролю, Тбілісі, Грузія тощо. Спочатку на кафедрі підприємництва у 2018–2019 навчальному році була впроваджена магістерська програма «Економічна безпека підприємства», сьогодні ця Програма продовжує реалізовуватися на кафедрі екологічного менеджменту та підприємництва Київського національного університету імені Тараса Шевченка. Цього року (2021) відбувся перший випуск магістрів за цією програмою. Нова магістерська програма «Економічна безпека підприємства» становить великий інтерес для абітурієнтів і професіоналів-практиків з метою вступу на навчання в майбутньому навчальному році.

Ключові слова: РХБЯ-освіта, експортний контроль матеріалів подвійного призначення, економічна безпека підприємства.

ОПЫТ ВНЕДРЕНИЯ НОВОЙ МАГИСТЕРСКОЙ ПРОГРАММЫ «ЭКОНОМИЧЕСКАЯ БЕЗОПАСНОСТЬ ПРЕДПРИНИМАТЕЛЬСТВА» В УЧЕБНЫЙ ПРОЦЕСС КИЕВСКОГО НАЦИОНАЛЬНОГО УНИВЕРСИТЕТА ИМЕНИ ТАРАСА ШЕВЧЕНКО

Купалова Г.И., Зандерс Ж.П., Гура В.Л., Богуславский А.В.

Целью статьи является изучение основных направлений и перспектив внедрения РХБЯ-знаний в систему высшего образования в Украине. Сравнительно небольшое количество публикаций в наукометрических базах данных по сравнению с другими более широко представленными темами посвящены вопросам преподавания и информирования о РХБЯ-угрозах и рисках. В то же время вопросы, связанные с внедрением РХБЯ-образования в университетах в области экономической безопасности, остаются полностью изученными. Магистерская программа «Экономическая безопасность предпринимательства» может сыграть значительную роль в формировании образования для устойчивого роста. Эта программа является одним из элементов «Целевой инициативы РХБЯ экспортного контроля материалов двойного использования и нематериальных технологий в странах ГУАМ», которая началась в январе 2018 года. В рамках подготовительной работы к Программе много научных тренингов было организовано Украинским научно-технологическим центром (УНТЦ) для преподавателей, партнеров, профессионалов и будущих студентов. Часть преподавателей экономического факультета учились на многих международных тренингах: 1) Семинар по экспортному контролю над материалами и технологиями двойного назначения в ГУАМ 2018, Киев, Украина; 2) Семинар о вызовах научной и технологической эволюции систем экспортного контроля, Тбилиси, Грузия и т. д. Сначала на кафедре предпринимательства в 2018–2019 учебном году была внедрена магистерская программа «Экономическая безопасность предпринимательства», сегодня эта Программа продолжает реализовываться на кафедре экологического менеджмента и предпринимательства Киевского национального университета имени Тараса Шевченко. В этом году (2021) состоялся первый выпуск магистров по этой программе. Новая магистерская программа «Экономическая безопасность предпринимательства» представляет большой интерес для абитуриентов и работающих специалистов с целью предстоящего вступления в будущем учебном году.

Ключевые слова: РХБЯ образование, экспортный контроль материалов двойного назначения, экономическая безопасность предпринимательства.

An experience of implementing New Master Programme «Economic Security of Entrepreneurship» into the educational process of the Taras Shevchenko National University of Kyiv

AN EXPERIENCE OF IMPLEMENTING NEW MASTER PROGRAMME «ECONOMIC SECURITY OF ENTREPRENEURSHIP» INTO THE EDUCATIONAL PROCESS OF THE TARAS SHEVCHENKO NATIONAL UNIVERSITY OF KYIV

Kupalova G.I., Zanders Jean Pascal ^{а)}, Gura V.L., Boguslavskyy O.V.*

Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

^{а)} Advisory Board on Education and Outreach (ABEO) of the Organisation for the Prohibition of Chemical Weapons (OPCW), Fondation pour la recherche stratégique in Paris, France

*e-mail: mexanika@ukr.net

Kupalova G.I. ORCID: <https://orcid.org/0000-0003-4486-8349>

Zanders Jean Pascal ORCID: <https://orcid.org/0000-0002-0636-9904>

Gura V.L. ORCID: <https://orcid.org/0000-0002-4870-4037>

Boguslavskyy O.V. ORCID: <https://orcid.org/0000-0001-9168-3844>

The purpose of the article is to study the main directions and prospects for the introduction of CBRN knowledge into the higher education system in Ukraine. A relatively small number of publications in scientometric databases in comparison with other more widely presented topics are devoted to the issues of teaching and informing about CBRN threats and risks. At the same time, questions related to the implementation of the CBRN Education in universities in the field of economic security remain not fully studied. New Master Programme «Economic Security of Entrepreneurship» can play a significant role in the formation of education for sustainable growth. This Programme is one of the elements of the «Targeted Initiative CBRN Export Control on Dual-Use Materials and Intangible Technologies in GUAM Countries» which began in January 2018. As part of the preparatory work for the Programme, many trainings were organized by the Science and Technology Center in Ukraine for teachers, partners, professionals and future students. Particularly teachers of the Faculty of Economics trained at many international trainings, including: 1) Seminar on Export Control of Dual-use Materials and Technologies in GUAM 2018, Kyiv, Ukraine; 2) Seminar on the Challenges of the Scientific and Technological Evolution for the Export Control Systems, Tbilisi, Georgia, etc. First, the New Graduate Professional Degree Programme «Economic Security of Entrepreneurship» was implemented at the Department of Entrepreneurship in 2018–2019 study year, today this Programme continued to be implemented at the Department of Environmental Management and Entrepreneurship of the Taras Shevchenko National University of Kyiv till now. This year (2021) was the first graduation of masters for this program. The New Master Programme «Economic Security of Entrepreneurship» is of great interest to applicants and working professionals with a view to future entry in future academic year.

Keywords: CBRN education, Export Control on Dual-Use Materials, Economic Security of Entrepreneurship.

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