

## Training Programs for Students on Chemical Safety and Security: Al-Qasim Green University as a Case Study

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### Abstract:

Al-Qasim Green University and its colleges began to adopt training programs on chemical safety and security for its students at various levels of study, whether at the undergraduate or postgraduate studies for the purpose of creating an educated generation of young graduates are aware of the requirements and concepts of chemical safety and security, on the other hand creating a graduates trained and qualified to achieve the requirements of the labor market in the framework of the partnership and community service.

These programs have been established by coordinating efforts with the central committee of the safety and security CBRN at the University of Babylon. After that, link these programs for students with the global program for chemical security CSP under the auspices of a civilian international institutions associated with the League of the United Nations, where the implement of the first project called (Iraq-12) as training on chemical safety and security for new students at colleges, 27-31/12/2015.

In an academic year 2016-2017, the central committee and the division of chemical safety and security at the university adopted training programs for new students sustainably each year, as well as training for students at their end-classes of study before graduation, as well as training for postgraduate students for the purpose of preparing graduates trained to meet the requirements of the labor market and to achieve teaching and learning requirements.

Through the above, it became necessary to draw a map for the steps and future training programs adopted by the University to create a qualified and trained generations acquired chemical safety and security skills and how to deal with various chemicals and keep them from being misused.

**Keywords:** University Students, Training for Chemical Safety and Security, Directions and Future Programs.

برامج تدريب الطلبة حول السلامة والأمن الكيميائي: جامعة القاسم الخضراء كحالة دراسية

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الخلاصة:

بدأت جامعة القاسم الخضراء وكلياتها العلمية بتبني برامج تدريبية حول السلامة والأمن الكيميائي تخصصية لطلبتها بمختلف مستوياتهم الدراسية والعلمية سواء كان في الدراسات الأولية أم في الدراسات العليا لغرض خلق جيل مثقف من الخريجين الشباب مدرك لمتطلبات ومفاهيم وأسس السلامة والأمن الكيميائية، من جهة أخرى تهيئة خريجين مدربين ومؤهل لتحقيق متطلبات سوق العمل في إطار الشراكة وخدمة المجتمع.

تم إقامة هذه البرامج التدريبية التخصصية للطلبة من خلال تنسيق الجهود مع اللجنة المركزية للسلامة والأمن الكيميائي والبيولوجي والإشعاعي والنووي في جامعة بابل لعمل برامج تدريبية لكوادرها. بعد ذلك تم ربط تلك البرامج التدريبية مع البرنامج العالمي للأمن الكيميائي CSP برعاية مؤسسات عالمية مدنية مرتبطة بعصبة الأمم المتحدة، حيث تم تنفيذ أول مشروع سمي بـ (عراق-12) كبرنامج تدريب حول السلامة والأمن الكيميائي لطلبة الكليات الجدد في كليات وأقسام الجامعة بتاريخ 27-31/12/2015.

في العام الدراسي 2016-2017 تبنت اللجنة المركزية وشعبة السلامة والأمن الكيميائي في الجامعة برامج تدريب لطلبتها الجدد في الصفوف الأولى بصورة مستدامة سنويا، فضلا تدريب طلبتها في الصفوف المنتهية من الدراسة قبل التخرج وكذلك برنامج تدريبي متخصص لطلبتها في الدراسات العليا لغرض إعداد خريجين مدربين في هذا المجال لاستيفاء متطلبات سوق العمل ولتحقيق متطلبات التعليم والتعلم.

من خلال ما تقدم، أصبح من الضروري رسم خارطة لخطوات وبرامج تدريب مستقبلية تتبناها الجامعة لخلق أجيال مؤهلة ومدربة مكتسبة مهارات السلامة والأمن الكيميائي وكيفية التعامل مع المواد الكيميائية المختلفة والحفاظ عليها من سوء الاستعمال.

الكلمات المفتاحية: طلبة الجامعة، تدريب السلامة والأمن الكيميائي، التوجهات والبرامج المستقبلية

**Introduction:**

Generally, lack of the knowledge and mis-using of chemicals in scientific labs in a college or university in general is one of the expected security vulnerabilities where opens the door wide to uncontrolled harmful incidents, as well as the ability to target the chemicals (especially dual-use materials) that have been used by terrorist people as explosive materials for their terrorism works.

Therefore, the idea of training students (the new students as an example) in the university and their knowledge about the requirements and conditions of the chemical safety and security during their studies within or outside the university is one of the necessary things to prevent or minimize the incidents on human and the environment or the incidents by terrorists, which are targeting the community and the country.

The purpose from the training of new students is to be able to understand and apply the standards of chemical safety and security, whether in college or university through their studies or in the community through the adoption of good ideas and the development of a sense of security <sup>(1)</sup>.

The control of the conscious youth (category of community: students of University) is one of the benefits that envisaged from the training in order to increase their knowledge and understanding the concepts of security, chemical safety, and environmental in general.

The participants benefit from SCCT will be knowledge and an access to the latest tools, software, and possible supplies that concerning with chemical security and safety, in addition to familiarize them with safety requirements and duties of the chemical security in scientific laboratories for the purpose of benefit firstly in the protection and safety of themselves from the risks produced by chemicals and secondly for the purpose of achieving the chemical security and its direct impact on the university and the community <sup>(2)</sup>.

The trainees are students and therefore they will be keen and very much interested to know everything related about the terms of chemical security and safety theoretically and practically, through direct relationship with their studies and their work after graduation, in addition to their discussions and sharing their knowledge with their colleagues to improve chemical safety and security in their laboratory facilities, they will know how to deal with chemicals and equipments in the labs or outside the university with their friends in the community for the purpose of access to the maximum levels of safety and security <sup>(3)</sup>.

**Results and Discussion:**

The University has adopted a policy and work methodology through student training programs through external support by the Chemical Security Program and the US Civilian Research and Development Foundation. These programs were characterized by the grants received to train the students through:

**1. Training Program for New Students at the University Colleges, Dec. 2015.**

**2. Training Program for Postgraduate Students, May 2017.**

There are three main objectives of the chemical safety and security training (CSST) workshops that specific for the college's students which are relate directly to the raising of the chemical security:

**Firstly**, According to the University colleges' plan to welcome the new students for the academic years periodically, the number of trainees (new students) up to many hundred a year. Therefore, these students have been graduated from secondary schools, with age under 19 years old (limits of teenage) and therefore, the control on this group of students and their understanding of the issues of public environmental safety and chemical security <sup>(4)</sup>.

**Secondly**, create a new generation cultured and conscious from the students in the early classes in colleges at the beginning of their life of university, capable of understanding, the analysis, and to achieve the requirements and conditions for achieving the chemical security and environmental safety <sup>(5)</sup>.

**Thirdly**, make the students are able to apply the training concepts practically. For example, how to deal with chemicals, save, classify, and knowledge of the health effects on human and the environment, in order to take advantage of them for the subsequent years of study, and also at the service of society.

However, the timing of the student training, especially in those parts of the study is very important to teach them the foundations, principles, concepts, and conditions of the chemical security before starting their practical studies of the chemical experiments in their labs.

From other hand, through this process, the training will educate and train students to requirements of chemical security for the purpose of raising their level of technical and professional skills and thus it will create a new generation of people with higher education degrees (for training of postgraduate students), well trained on requirements of chemical security, and through them will be the transfer of expertise through professional lives

which they were trained to their families and their friends in the community, or others working with them in their offices, or from the undergraduate studies students if they worked as an academic teachers in the nearest future.

However, these programs of chemical security came within an integrated sequential programs planned for the Al-Qasim Green University and their colleges with scientific departments, including those related with students (post-graduate and undergraduate), teachers, workers in the laboratory of specialists, and security guards with the Iraqi facilities protection service (FPS) as well. And therefore can for these programs to work hard to raise the level of security of the people in general in the long term and, in particular, through the university and its faculties and students of both of undergraduate and postgraduate.

The University and their colleges was established at 2012. Now, it has central committee for chemical safety and security which is responsible for following the subcommittees at their colleges that including the chemical labs and storages in their colleges and other related issues <sup>(6)</sup>.

From other view, the idea of training postgraduate students in the university and teaching them about the requirements and conditions of the chemical security during their studies within or outside the university is one of the necessary things to prevent or minimize the incidents on human being and the environment or the incidents by terrorists, which are targeting the community and the country.

Through the training of these educated category of people with higher educated degrees who will work in the future as lecturer/ teachers in colleges or leaders/ managers in departments/ sections and therefore we will ensure the presence of high level of chemical security requirements well be applied in those places and also on the other hand, we will ensure the presence of well-trained level for workers in the laboratories or sections (students, researchers, workers, administrators, guards, etc.) for the purpose of spreading the spirit of the culture and awareness of chemical security requirements from the top of the educational pyramid and not only from the base (from teaching staff, already trained well on chemical security).

However, the purpose behind these training programs are to enable the trainees to understand and apply the standards of chemical security throughout their studies or in the community by the adoption of good ideas and the development of a sense of security.

The control of the tendencies and trends for the conscious educated youth (category of community: new or postgraduate students) is one of the benefits that envisaged from the training in order to increase their knowledge and understanding the concepts of chemical security and environment in general.

**References:**

1. Alaa K. Hashim Al-Khalaf, *Iraqi National Journal of Chemistry*, 2016, **16**, 71-81.
2. A. Al-Zuhairi, W. Al-Dahhan, F. Hussein, K. Rodda, E. Yousif, *Oriental Journal of Physical Sciences*, 2016, **1**, 31-35.
3. A. Ali, N. Shaalan, W. Al-Dahhan, E. Yousif, *Open Journal of Safety Science and Technology*, 2016, **6**, 77-80.
4. Shireen R., W. Al-Dahhan, A. Al-Zuhairi, F. Hussein, K. Rodda, E. Yousif, *Journal of Laboratory Chemical Education*, 2016, **4**, 35-37.
5. W. Al-Dahhan, A. Al-Zuhairi, F. Hussein, K. Rodda, E. Yousif, *Karbala International Journal of Modern*, 2016, **2**, 276-279.
6. F. Hussein, W. Al-Dahhan, A. Al-Zuhairi, K. Rodda, E. Yousif, *Open Journal of Safety Science and Technology*, 2017, **7**, 69-75.