Maintaining a Cybersecurity Curriculum: Professional Certifications as Valuable Guidance

Kenneth J. Knapp
University of Tampa
Tampa, FL 33606, USA

Christopher Maurer
University of Virginia
Charlottesville, VA 22904, USA

Miloslava Plachkinova
University of Tampa
Tampa, FL 33606, USA

Abstract: Much has been published about developing a cybersecurity curriculum for institutes of higher learning (IHL). Now that a growing number of IHLs globally offer such programs, a need exists on how to guide, maintain, and improve the relevancy of existing curricula. Just as cybersecurity professionals must hone their skills continually to keep up with a constantly shifting threat landscape, cybersecurity programs need to evolve to ensure they continue to produce knowledgeable graduates. In this regard, professional certifications in the cybersecurity industry offer an opportunity for IHLs to maintain a current curriculum. Governing bodies that manage professional certifications are highly motivated to ensure their certifications maintain their currency in the competitive marketplace. Moreover, employers who hire security professionals look for certifications in assessing a candidate’s overall credentials. This paper attempts to fill a void in the literature by exploring the use of professional certifications as helpful input to shaping and maintaining a cybersecurity curriculum. We then provide a case study involving an undergraduate cybersecurity program in a mid-sized university in the United States. Before concluding, we discuss topics such as experiential learning, cybersecurity capstone courses, and the limitations to our approach.

Keywords: Cybersecurity, Curriculum design & development, Security, Certifications

Download this article: JISE - Volume 28 Issue 2, Page 101.pdf

A cyber security degree will only take you so far up the job ladder. At some point, you will need a professional IT security certification. Which Certification to Choose. When it comes to entry-level training, you might start by considering certifications such as: CompTIA Security+. GSEC: GIAC Security Essentials Certification. SSCP: Systems Security Certified Practitioner. Take the time to compare CompTIA Security+ and GSEC. GSEC has a solid reputation within the industry and is approved for DoD 8570 Baseline Information Assurance. Alternatively, Security+ is one of the most well-known beginners' certifications. 5.3 Linking Cybersecurity Curriculum to Professional Practice. 80. 5.3.1 Application Areas. 80. 5.3.2 Training and Certifications. 82. 5.4 Workforce Frameworks. To develop comprehensive curricular guidance in cybersecurity education that will support future program development and associated educational efforts at the post-secondary level. While the CSEC2017 JTF has chosen to use the more generally accepted term cybersecurity instead of the term cyber sciences advanced by the CEP8, conceptually the terms are consistent.