

Cyber 1 & 2: Foundations of Cybersecurity CSEC Update

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Outline

- Growth of cyber programs
- Importance of articulation
- CSEC 2017 > Cyber2yr2020 > CSEC Supplement
- CSEC Supplement
 - Task Force Charge & Process
 - Content
 - LOs
 - Instructional guidance
 - Cyber 1, 2 courses
 - Symposium How you could use the CSEC Supplement



• Growth in cybersecurity education at all levels

~385 universities and 384 community colleges with a cybersecurity CIP code for bachelor's degrees and associate's degrees

	Bachelor's Degrees	Associate's Degrees	Minors/Concentra- tions/Tracks	Certificates	Total
University n=289	180	19	178	68	445
Community College n=157	12	125	46	175	358
Total n=446	192	144	224	243	803

An opportunity for scalable pathways that integrate high school -> college and college -> college

- Articulation can:
 - help students move between educational institutions or programs without losing credits or repeating work. This can save students time and money
 - help educational institutions build more seamless learning pathways in an effort to bridge students more effectively from high school to college and among colleges and universities and eventually into the workforce.

Motivation



CSEC 2017

Cyber2yr2020

CSEC Supplement 2025



CYBERSECURITY









Supplement to CSEC 2017

Foundational Cybersecurity Content and Instructional Guidance for Secondary and Postsecondary Cybersecurity Education January 2025



Figure 3. CSEC thought model.



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• Task Force Charge:

 To review the CSEC 2017 curricular guidelines and make recommendations for updates to the essential body of knowledge underpinning foundational collegiate level courses in cybersecurity and upperlevel high school offerings in cybersecurity

Task Force

Process

- Matt Bishop, Beth Cerrone, Jun Dai, Melissa Dark, Jenny Daugherty, Philip Huff, Cara Tang, Cindy Tucker
- Universities, Community Colleges, and High School represented
- Two rounds of public review and comments
 - (1) Focus groups
 - (2) Full draft with survey for input





CSEC Supplement

- The curriculum model uses the same **knowledge areas** as CSEC 2017 but with **topic** categories that cut across knowledge areas
- Learning outcomes are the primary output organized across knowledge areas and topics
- Cross-cutting concepts are mapped to each learning outcome to reinforce central foundational themes
- Instructional guidance helps to form a more common understanding of cybersecurity terms and increase awareness of existing instructional resources



Course Packaging & Sequencing





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Using the CSEC Supplement

- Current Uses
 - Cyber 1 and Cyber 2 two semester college sequence at UALR, U of A, DePaul.
 - Foundations of Cyber course in NCTA for high school teachers single semester graduate course
 - Foundations of Cyber course for high schools taught by NCTA teachers for dual credit at UALR, U of A, DePaul.
- How You Could Use It
 - Discussion

5 CAE Community Symposit **Questions?**

CAE Symposium