COMMUNITY COLLEGE CORNER

Elizabeth K. Hawthorne

Associate-Degree Curricular Guidance for

Information Technology

THE ACM COMMITTEE for Computing Education in Community Colleges (CCECC) was pleased – a decade ago – to produce the Guidelines for Associate Degree Programs to Support Computing in a Networked Environment. Had the etymology of the term "Information Technology" (IT) evolved more rapidly, this document would have undoubtedly been titled, "Guidelines for Associate Degree IT Programs" or something closely akin to that. For in effect these Guidelines, constituted by tracks in Networking Services, User Support Services and Internet/Web Services, reflects what many would characterize today as three foundational pillars of "traditional IT."

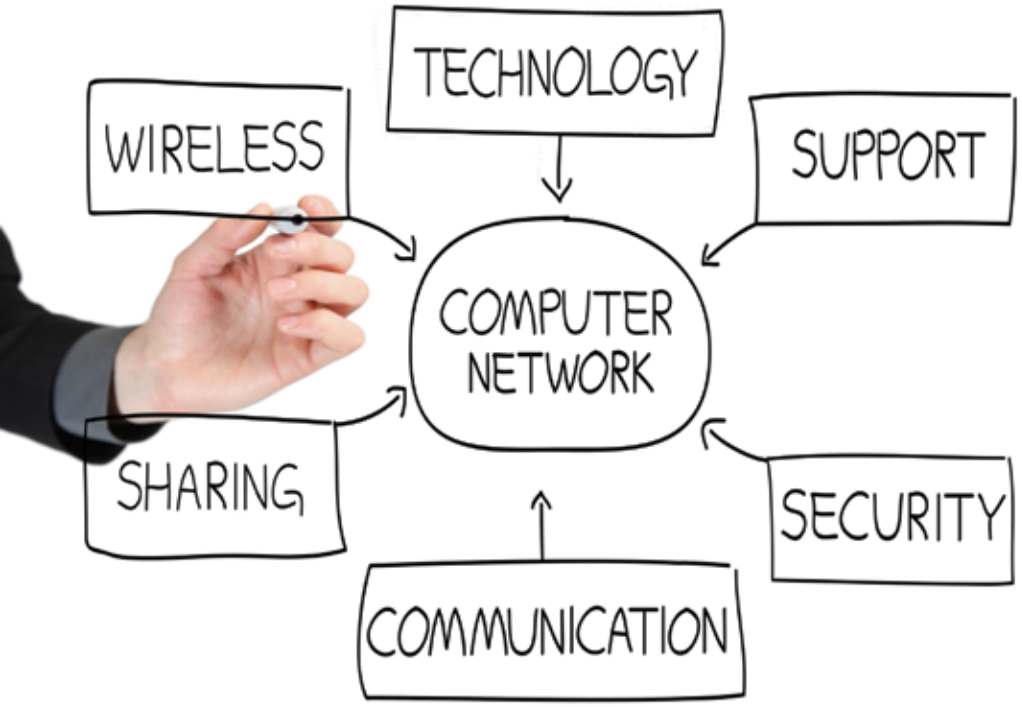
Between the publication of the March 2000 Guidelines and the world of associate-degree computing programs today, how the landscape has dramatically changed! And while at the turn of the century the term IT may not have been sufficiently mature to connote meaningfully the nature of the Guidelines being produced, now in 2012 the term IT has evolved to include – or not, depending on one's perspective – many, many degree programs. One can reasonably ask whether Health Information Management is considered an IT degree program, while the same could be debated for Biotechnology, Video and Film Production, Geographic Information Systems, Instrumentation Technology, Electronics Technology, and Cybersecurity.

©WWW.ISTOCKPHOTO.COM/ALEX SLOBODKIN

The ACM CCECC, in fact, has posed such questions to a select team of professionals. Charged by the ACM Education Board with formulating recommendations regarding the need for, and potential nature of, contemporary curricular guidance relevant to IT-related associate-degree programs, the CCECC organized a diverse working group to undertake this charge. In this initial investigative phase, the team's work coalesced around a series of foundational questions employing the Delphi method. A subsequent phase, should these working group recommendations be adopted by the Education Board, will entail the development of curricular and assessment guidance by an international team.

During the investigative phase, the working group arrived at the following key conclusions to help steer the development of the curricular and assessment guidance in the next phase:

- There is a compelling need for ACM to produce IT curricular guidance for the associate-degree level. However, the traditional model for such guidelines built on a comprehensive body of knowledge comprised of knowledge areas made up of knowledge units in turn comprised of topics, is not well suited to the dynamic and encompassing field of IT.
- ACM IT curricular guidance should be formulated using a new approach that is better suited to the varied and vibrant universe of associate-degree IT programs. A blended model is recommended, that is not only sensitive to the existing baccalaureate IT body of knowledge, but also accommodating to rapidly changing IT developments and emerging technologies. Without a doubt, such a blended model must be built from the ground up on a framework of learning outcomes.



©WWW.ISTOCKPHOTO.COM/MATS PERSSON

- While one can argue the designation of any number of associate-degree programs as under the designation of IT (alluded above), there is no doubt that many programs now share a collection of core IT competencies. The new and innovative ACM IT curricular and assessment guidance should reflect this reality, and should be based upon a compilation of well-vetted knowledge and performance outcomes.
- The learning outcomes that define core IT competencies must not be overly technology specific or prescriptive and must be crafted in a manner that ensures they have reasonable staying power in this era of extraordinarily rapid change. The core IT learning outcomes must be adaptable and must accommodate significant diversity for programs tailored specifically to local employment opportunities, students pursuing transfer opportunities to baccalaureate IT programs, curricula integrally influenced by industry certifications, interdisciplinary programs, as well as capstone and internship opportunities.
- More so than perhaps in any other computing field, business and industry play a critical role in constituting core IT knowledge and performance outcomes. ACM associate-degree IT curricular guidance must be heavily influenced by the current and future needs of business and industry, by certifications and related curricula, by government and standards bodies, and by new and emerging technology.
- Today's world is influenced significantly by the fact that IT spans borders and continents, cultures and languages, time zones and geographies, governments and industries. Business worldwide is built on technology resources and capabilities; workers around the globe must acquire core IT competencies and educational institutions in every nation are called on to provide an IT-enabled workforce. The new and innovative ACM IT curricular and assessment guidance must be international in application.
- Core IT learning outcomes must be accompanied by well-designed assessment methods (e.g., rubrics) and meaningful evaluation metrics to gain credibility and broad acceptance by both the two-year college community and the business and industry community. Significant emphasis must clearly be placed on demonstrating the job readiness of IT associate-degree graduates.

On a final note of gratitude, the success of the investigative phase would not have been possible without the noteworthy contributions from the following IT educators and practitioners:

Robert Campbell, ACM CCECC Vice-Chair and Vice President for IT, CUNY Graduate Center
Deborah Boisvert, BATEC Project Director, University of Massachusetts
Robert Deadman, Assistant Vice President Business & Computing Technology, Ivy Tech Community College System
Sierra Hampton, Certification and Hiring Manager, Citrix Systems
John Impagliazzo, Professor Emeritus, Hofstra University, ACM Education Board
Margaret Leary, Professor, Northern Virginia Community College
Dan Myers, Academic Coordinator, Citrix Systems
Lance Perez, Professor and Associate Vice Chancellor of Academic Affairs, University of Nebraska-Lincoln, IEEE representative
Michael Qaissaunee, Professor and Department Chair, Brookdale Community College
Jason Wertz, Professor, Montgomery County Community College
Anita Verno, Professor and Department Chair, Bergen County College
Chris Wu, MPICT Associate Director, City College of San Francisco
Kim Yohannan, Academic Alliance Manager, EMC2 Corporation

The CCECC is thrilled to be leading this innovative curricular initiative for ACM. If anyone is interested in being a reviewer or candidate for participation in the next phase of development, feel free to contact the committee chair, Elizabeth Hawthorne at ehawthorne@acm.org. **Ir**

Elizabeth K. Hawthorne
Computer Science Department
Union County College
Cranford, New Jersey 07016 USA
Hawthorne@ucc.edu

DOI: 10.1145/2077808.2077817