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NEWS RELEASE

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ACM Issues Curriculum Guidelines for IT Baccalaureate Degrees

New Curricular Recommendations Reflect Transformative Advances in Information Technology Field, and Seek to Close IT Skills Gap

NEW YORK, NY, January 17, 2018 – A task group formed by the Association for Computing Machinery (ACM) and the IEEE Computer Society (IEEE-CS) has issued a report outlining competencies that information technology (IT) majors earning baccalaureate degrees should possess. The new publication, Information Technology Curricula 2017, also known as the IT2017 report, is an update to the original IT curricular guidelines which were issued in 2008, and reflects the transformative advances in IT technologies over the past 10 years, as well as the ways in which the teaching of computing has improved. The report was developed in close consultation with industry-based practitioners to ensure that graduates are workforce-ready.

At its core, the information technology discipline studies systemic approaches to build and manage secure computing technologies that accomplish users' personal, organizational, and societal goals. IT graduates are hired to meet employment demands in well-established IT domains, such as networking, information management, platform and integrated systems technologies, as well as emerging domains with increasing economic impact, such as cybersecurity, cloud and edge computing, data analytics, or a combination of cloud and Big Data as seen in Internet of Things platforms. While the theoretical foundations and practices of information technology overlap with those in other computing disciplines, the new report calls for IT students to learn a broad set of skills to prepare them for the unique and fast-evolving demands of their field. For example, IT professionals often need expertise in diverse and new technologies that they can apply and integrate in a wide range of scenarios.

The Information Technology Curricula 2017 report is a detailed overview of essential IT domains of competencies that all graduates should achieve, complemented by supplemental IT domains. The report makes the case that mastering IT knowledge should be coupled with the development of relevant skills and adequate dispositions by which students demonstrate what they have learned. Internships and co-ops, public technical presentations, access to computing technologies in the work environment, capstone and team projects, and ongoing engagement of employers in curriculum development and implementation are examples of how IT programs enhance learning experiences with professional contexts for their students.

"For several years, hiring managers have been complaining about an IT skills gap," explains task group chair Mihaela Sabin, a professor at the University of New Hampshire. "They have been telling us that IT graduates are not workforce-ready. For this report, we worked closely with industry representatives to ensure the curriculum reflects the skills employers need. At the same time, in emphasizing competencies, the task group is not simply referring to what students should know. Students must demonstrate their knowledge through performance tasks and assessments. We also encourage accrediting institutions to develop criteria to evaluate how students achieve IT competencies by applying what they know in professional contexts." John Impagliazzo, IEEE Life Fellow and ACM Education Board Liaison to the project, adds: "The IT2017 report is destined to be a landmark publication useful to a wide range of institutions and to industry and academic professionals worldwide. The report sets a new level of quality by shifting focus from topics to IT competencies."

The report also encourages IT programs and accrediting institutions to increase the amount of mathematics coursework for IT baccalaureate degrees to prepare IT graduates for the challenges of the rapidly-shifting tech job market with technological innovations. The [US Bureau of Labor Statistics](#) estimates that 546,100 new computing jobs will be added by 2026.

Information Technology Curricula 2017 was developed incorporating the latest research on the learning and teaching of computing. In addition to articulating IT domains and competencies, the report provides baccalaureate institutions with teaching strategies and technical descriptions of curricular materials. The curriculum guidelines were designed to be relevant to baccalaureate institutions around the world. Task group members included representatives from Canada, China, the Netherlands, Saudi Arabia and the United States. Several other professional organizations had representatives on the task group such as the Association for Information Technology Professionals (AITP), the Canadian Information Processing Society (CIPS), and the Information Systems Audit and Control Association (ISACA).

About ACM

ACM, the Association for Computing Machinery www.acm.org, is the world's largest educational and scientific computing society, uniting computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

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