

# CE2016: Updated Computer Engineering Curriculum Guidelines

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**Abstract**— Joint ACM/IEEE Computer Society undergraduate computer engineering curriculum guidelines are slated for release in 2016. These update the 2004 guidelines commonly known as CE2004. The presenters are part of the task group leading the revisions and will give an overview of the latest draft. Participants will engage in discussions on potential improvements to the guidelines to ensure that they are useful to programs as they work to ensure their curricula reflect the state-of-the-art in computer engineering education and practice and are relevant for the coming decade.

**Keywords**—Computer engineering; curriculum guidelines; CE2004; CE2016; ACM; IEEE Computer Society

## I. BACKGROUND

This is the seventh conference presentation [1–6] supporting a process began by the ACM and the IEEE Computer Society in 2011 to update the CE2004 document, formally known as “Curriculum Guidelines for Undergraduate Degree Programs in Computer Engineering” [6]. Using nearly 300 survey responses plus input at conferences and working meetings, the authors are leading a significant update of the

document with a goal of a 2016 release. The document will be known as “CE2016”.

In various subject areas the authors are also consulting the related document “Computer Science Curricula 2013” (CS2013) and the draft produced by the parallel effort to update the software engineering guidelines (SE2004).

## II. SPEICAL SESSION FORMAT

This special session will engage computer engineering educators in evaluating the current draft as it approaches completion.

The authors will give an overview of the structure of the CE2016 document followed by key areas receiving initial or substantially enhanced coverage. They will also discuss how computer engineering educators can contribute to the process. Small group discussions will focus on how the document can best provide value to both new and existing computer engineering undergraduate programs.

Specifically, the presenters will summarize topics added, expanded, and removed from the guidelines in response to feedback from academia and industry. They will show how the new document also aims for greater clarity by succinctly documenting the scope and purpose of each major “knowledge area” for computer engineering undergraduates. Drilling down, they will show how “knowledge units” give clarity to programs by specifying “learning outcomes” that define what successful students will be able to do. The document also incorporates details of the required mathematical background and includes many important, “discretionary” areas and outcomes that not all programs will wish to cover.

The agenda will be as follows.

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| 0:00–0:15 | Overview of the CE2016 guidelines document  |
| 0:15–0:25 | Summary of key areas receiving initial or significantly updated coverage: embedded systems, digital systems design, multicore, security, mobile and power aware, software engineering, and verification and validation of computing systems |
| 0:25–0:35 | Plans for completion and ways individuals can contribute to the process   |
| 0:35–1:05 | Small group discussions among the audience participants: How should the document change to provide a valued resource to both new and existing undergraduate computer engineering programs?  |
| 1:05–1:15 | Report feedback to all attendees  |
| 1:15–1:30 | Questions and comments from audience participants   |

## REFERENCES

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