

Curriculum Update from the ACM Education Board: CS2008 and a Report on Masters Degrees

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SUMMARY

In this special session, members of the ACM Education Board will give information about two current projects in computer science curriculum developments: an update to the CS2001 volume, CS2008, and a new venture, a report on Masters degrees in Computing. Feedback is required on both reports as the CS2008 volume is an interim measure in advance of a more thorough review in due course. The Masters report will be a report on work-in-progress and feedback on the current progress and the project goals will be welcome.

Categories and Subject Descriptors

K.3.2 [Computing Milieux]: Computer and Information Science Education – *Computer science education, curriculum, information systems education*

General Terms

None

Keywords

Curriculum, computer science education, computing education

1. INTRODUCTION

For many years ACM, in cooperation with IEEE-CS and AIS has produced curriculum reports for undergraduate programs. Currently there are volumes on Computer Science (CS2001), Computer Engineering (CE2004), Information Systems (IS2002) and Software Engineering (SE2004). There is also a volume on postgraduate degrees in Information Systems (MSIS2000). All can be accessed via the ACM Education Board web site, <http://www.acm.org/education/curricula-recommendations>.

All of these volumes must be kept up-to-date to reflect current practice in the discipline. The CS 2001 volume is under review with the intention of making some interim changes before a more comprehensive review takes place. In addition, it is recognized that Masters degrees have not been given the attention they deserve. In view of the growing importance of Masters degrees, both in the US and Europe, the ACM Education Board has begun work on a curriculum review and report on Masters level education in computing.

2. THE SESSION

The two subjects of this session are joined by their common focus on curriculum issues. The Education Board of the ACM is addressing both the question of timeliness of the traditional undergraduate curriculum recommendations and the consequences of the lack of guidance in Masters level programs.

The session will present the results of the interim review of CC2001, and will be open for discussion and feedback. In addition, the session will present the progress to date on the implementation of the new approach to curriculum recommendations. The traditional approach to curriculum recommendations involves very large expenditures of human resources and money and leads to recommendations that go out of date too fast for the investment made. A new approach to curriculum recommendations will involve a continuous review by the computing education community. There is likely to be a stable current recommendation, an active discussion site, and an emerging set of modifications. When the modifications needed become substantial, an updated recommendation will be produced. The new process will be presented for discussion.

An important resource in developing continually evolving curriculum recommendations is the Computing Ontology. The Computing Ontology allows curriculum to be designed with a conscious awareness of what is included, what is excluded and

what is optional. The ontology will be presented and its role in curriculum development will be described.

Although the ACM Education Board has a long history of curriculum recommendations for undergraduate programs at the two-year and four-year levels, a recommendation on Masters level programs has been available only for the information systems programs. The ACM Education Board has initiated a review of Masters level programs in computing and will determine if curriculum recommendations at this level are appropriate and what form such recommendations should take. The project includes representatives of activity in the U.S., the U.K., and in several European countries. The results of this investigation and the plans for going forward with recommendations at the Masters level will be presented in the session.

The expected allocation of sections of this session to the presenters is as follows:

Andrew McGettrick, chair of the ACM Education Board, and Renee McCauley, co-chair of the curriculum project will introduce the session and provide an overview of the goals of the Board with regard to curriculum recommendations. They will describe the results of the interim review of CC2001.

Gordon Davies will describe the plans for future curriculum development, including the role of the computing ontology in this process.

Lillian (Boots) Cassel will describe the state of work related the masters level programs and provide an introduction to the goals and plans for future developments at this level. Michael Caspersen will describe the role of Masters degrees in European universities and the ways that those programs are developing.

3. EXPECTATIONS

The session will be of interest to all engaged in undergraduate and postgraduate teaching of computing.

The new process and the role of the ontology are a radical departure from traditional curriculum development. As this new process evolves, it is essential to involve the community of computing educators so that the results will continue to serve the needs as past curriculum recommendations have done.

Feedback is a critical element of the session. There will be ample time for audience response. Specific questions will be used to initiate discussion. A short survey form may also be included to provide clear take-away information on the community response to the committee's plans.

4. REFERENCES

ACM curriculum reports: www.acm.org/education/curricula-recommendations

The Computing Ontology project:
what.csc.villanova.edu/twiki/bin/view/Main/OntologyProject