

ACM Education Board and Masters Level Programs

Gordon Davies
ACM Education Board
Milton Keynes, UK
gordon.davies7@virgin.net

Lillian N. Cassel
Villanova University
Dept. of Computing Sciences
Villanova PA
+1 610 519 7341
cassel@acm.org

Art Pyster
Stevens Institute of Technology
Castle Point on Hudson
Hoboken, NJ 07030
+1 703-717-8110
art.pyster@stevens.edu

Michael Caspersen
Aarhus University
Department of Computer Science
+45 8942 5667
mec@cs.au.dk

Heikki Topi
Bentley College
Associate Dean of Business
+1 781 891 2799
htopi@bentley.edu

ABSTRACT

This special session will provide information about the status of work related to Masters programs in Computing. Specifically, the session will describe work completed in the following areas: the categorization of masters programs in computing, the development of curriculum recommendations for masters programs in software engineering, the collaborative work with the Association for Information Systems on the Masters program in Information Systems

Categories and Subject Descriptors

K32 [Computing Milieux]: Computer and Information Science Education – *Computer science, education, curriculum, information systems education*

General Terms

Documentation

Keywords

Curriculum, computing education, software engineering, masters degree

1. INTRODUCTION: Overall Objective

ACM Education Board, IEEE-CS, and AIS have collaborated over the years to produce curriculum recommendations for first degrees in the various branches of Computing. More recently they have collaborated on a Task Force to produce a report on Masters degrees. There has been a long history of Masters Degree recommendations in Information Systems. A separate committee has worked with broad input on a recommendation for Masters level programs in Software Engineering. This special session has two purposes. 1) To update the community on masters level curriculum efforts and 2) to provide an opportunity to receive more feedback that will have a direct impact on these projects.

Copyright is held by the author/owner(s).
SIGCSE'09, March 3–7, 2009, Chattanooga, Tennessee, USA.
ACM 978-1-60558-183-5/09/03.

2. THE SESSION: Outline of the session

2.1 Masters degrees in computing

Presenters: Lillian Cassel and Gordon Davies

The first degree curriculum recommendations produced by task forces comprised of members of ACM, IEEE-CS and AIS are well known. [1-6] In 2007 a task force was formed to produce a report on masters degrees in Computing. It soon became clear that comprehensive curriculum recommendation guidelines would be difficult, if not impossible, to produce, because of the variety of masters programs in existence. The extent of the degree of breadth and depth in the existing Masters degree programs is far greater than that exhibited by first degree programs..

Consequently, the task force concentrated on the various types of masters degrees available, with the objective of providing a framework that could be used to classify and capture the diversity of masters degree programs. Such a framework could be used to compare the various degree programs and thus be useful for prospective students looking for a masters degree, as well as by employers. It would also provide a place for those planning new degree programs to begin their program design. Currently, there is a considerable variety of degrees on offer, ranging from a year of more concentrated study in a sub discipline of computing, to an all encompassing fast track immersion in computing. There are various professional masters programs targeted at those currently working in the IT industry, and there are degrees for those who know little about computing, but see a masters degree as opening up the employment field. The task force was fortunate to have members from outside the North America and so there was an opportunity to include information about Masters degrees in Europe, for example, where the Bologna Agreement [7] is having an impact on the nature of degrees as countries set up their own qualifications frameworks as Europe moves to the formation of the European Higher Education Area.

The task force looked at many types of masters degrees and produced a list of the various attributes that distinguished the various programs. The session will present the attributes

developed by the committee and modifications motivated by discussions at ITiCSE. The point of the presentation will be to inform the community of the progress of this work and to obtain additional input as the committee nears its final report.

2.2 Curriculum recommendations in Software Engineering

Presenter: Art Pyster

Curriculum recommendations for Masters level work in Software Engineering were first established by the Software Engineering Institute (SEI) in 1991. In 2007, a coalition from academia, industry, government and professional societies came together to develop a Graduate Software Engineering Reference Curriculum (GSwERC). Based on the Software Engineering Body of Knowledge (SWEBOK)[8] and the curriculum recommendations for software engineering (SE2004)[3], the work builds on past work and includes leading contributors to the field. The recommendations of this group are now ready for wide spread presentation and feedback. Specific details of the proposal will be presented in this session and participants will have an opportunity to identify the strengths and possible weaknesses of the proposal and have a direct effect on the final recommendation.

2.3 The MSIS

Presenter: Heikki Topi

The Information Systems community has been active in developing curriculum recommendations for many years and were the leaders in providing guidance for masters level programs. This session will include an introduction to the masters curriculum for Information Systems and the motivations and techniques used in its development. Session attendees will be introduced to the leaders in this effort and become aware of opportunities for further involvement. The MSIS work is not currently in development, but the group has a history of continuing review and will be glad to receive input for future consideration. The work of this group is jointly sponsored by the ACM Education Board and the AIS.

3. EXPECTATIONS

This session is intended to provide the SIGCSE community with up-to-the minute information about ongoing work in the area of Masters programs and program guidelines and to allow those efforts to be informed by the community. The presentations will be kept as short as possible for providing the needed information. Community feedback will be encouraged and detailed records of the session will be used to inform the ongoing work of these projects.

ACM Education Board Chair, Andrew McGettrick will introduce the projects and receive the comments of the community.

4. SUITABILITY FOR SPECIAL SESSION

The original purpose of special sessions was to provide a venue for communication of activities of boards and committees and some special grant projects. This is a part of the participation of the ACM Education Board in SIGCSE 2009. Close connections to SIGCSE are important for the Education Board and the SIGCSE community also benefits by knowing what the Education Board is doing.

5. ACKNOWLEDGMENTS

These committees are much larger than the number of people able to attend the session. The contributions of all participants is gratefully acknowledged.

6. REFERENCES

- [1] *IS 2002: Curriculum Guidelines for Undergraduate Programs in Information Systems*. 2002, Association for Information Systems and ACM.<http://www.acm.org/education/curricula.html>
- [2] *CE 2004 - Curriculum Guidelines for Undergraduate Degree Programs in Computer Engineering*. 2004, ACM and IEEE-CS.<http://www.acm.org/education/curricula.html>
- [3] *SE 2004: Curriculum Guidelines for Undergraduate Degree Programs in Software Engineering*. 2004.<http://www.acm.org/education/curricula.html>
- [4] *An Agenda for Excellence: Creating Flexibility in Tenure-Track Faculty Careers*. 2005, American Council on Education and the Office of Women in Higher Education and the Office of Women in Higher Education
- [5] *Curriculum 2005: The Overview Report*, in *Secondary Curriculum 2005: The Overview Report*, Secondary. 2005, ACM Press: Place Published. p. Pages.<http://www.acm.org/education/curriculum>
- [6] *Draft: Information Technology 2005*. 2006.<http://www.acm.org/education/curricula.html>
- [7] Education, E.A.f.Q.A.i.H., *Standards and Guidelines for Quality Assurance in the European Higher Education Area*. 2005, European Association for Quality Assurance in Higher Education: Helsinki, Finland.www.bologna2009benelux.org/
- [8] *The Software Engineering Body of Knowledge*. 2004. www.swebok.org