Workshop on Developing Graduate and Postgraduate Software Engineering Courses

Helen M. Edwards and J. Barrie Thompson
School of Computing Engineering and Technology
University of Sunderland, St Peter's Way,
Sunderland SR6 0DD, United Kingdom.
E-mail: {helen.edwards/barrie.thompson}@sunderland.ac.uk

Introduction

The call for papers for the conference has highlighted that Software Engineering has come of age and we now have licensed Software Engineers in the State of Texas. These movements mean that in the new millennium there will be an even greater demand for Software Engineering education not only to graduate level but also at graduate and postgraduate level. In fact the requirement at the higher level could be the greater as graduates from main steam computing courses will wish to refine their knowledge and abilities and staff already in the industry will wish to update theirs. The market need for Software Engineering courses is already demonstrated by the shortage of highly skilled software engineers: this is frequently discussed in both the popular industry’s press (such as Computer Weekly in the UK) and also in academic circles (for instance several recent issues of IEEE Computer have had articles on this topic). Moreover, in academia there is a chronic shortage of able candidates to fill research studentships and research assistant posts. This is a global shortage as has been demonstrated at software engineering fora around the world (for instance the Software Engineering Association's London workshop in 1999, and the IEEE Conference on Software Engineering, Education and Training in New Orleans in March 1999). Thus there is a clear need to develop graduate and postgraduate Software Engineering courses to meet local, national and international needs.

Workshop Aim and Objectives

In this workshop the prime aim will be to determine a set of guidelines that can be used in the development of graduate and postgraduate Software Engineering courses. In achieving this aim the our objectives are to examine:

- Curricula: soft and hard options
- Core and non-core subjects and the place for optionality
- Relationship with research specialisms
- Delivery modes and teaching and learning mechanisms
- Assessment
- Meeting the needs of industry: with regard to existing and new staff
- The role of professional bodies and aspects relating to accreditation and licensing.
Prior and Initial Activities

To ensure the time in the workshop is spent as effectively as possible the position papers of the participants are to be circulated in advance of the conference. In coming to the workshop the delegates are expected to bring with them a list of key issues that need to be considered (some of these will be highlighted in their position papers). Delegates will also be encouraged to study the details of the course described below (these details will be made available prior to the workshop on the WWW).

The initial mechanism used to focus discussion will be the consideration of a specific Software Engineering post graduate course that has recently been developed at the University of Sunderland in the UK. The course will begin operation in full-time and part-time modes, at Sunderland, in September 1999. However, it is intended that shortly after that date the course will be further developed to operate in distance learning mode. This will allow the course to be operated on a world-wide basis following the successful approach adopted for its sister masters course: the MSc in Computer Based Information Systems. Details of the multi-mode operation of this latter course were detailed at the 1999 CSEET conference [1].

Operation of the Workshop

1. Recap main themes of position papers, mapping of these against aim of workshop and the topics listed above for examination.
2. Break out into activity groups: each group to examine their topic and (i) identify the issues that are important (ii) prioritise these with explicit rationale (iii) provide evidence to justify these priorities: these should also be backed up by evidence.
3. Feedback to full group: nominated speaker to feedback themes emerging from group - initially
4. Comparative analysis of themes from each group: in “mixed” groups analyse the results from the feedback to identify common themes, conflicts etc.
5. Synthesis of features, in the full group: specification of components that must be addressed in establishing post-graduate Software engineering course, populated by “mini scenarios” to illustrate most pertinent points.

Final Deliverable

A final outcome of the workshop will be the production of a report detailing the major recommendations relevant to the aim and the topics considered. This will be circulated to participants and a paper based on it will submitted for journal publication.

Reference