

Technology in the Teaching and Assessment of Engineering Prerequisite Courses

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Abstract - This is a hands-on workshop for faculty and support staff. The goal is to have participants ready to implement technology in their courses using the LON-CAPA content and course management system at their institution for teaching and assessment. Participants will be introduced to and learn (a) to use key features such as authoring, and (b) to set up and operate a complete course with homework assignments, quizzes, examinations, bulletin boards, lecture materials, etc. and (c) to use advanced assessment tools (see www.lon-capa.org).

Index Terms – Assessment, Course management tools, LON-CAPA.

INTRODUCTION

Technology is playing an increasingly important role for course and for educational resource management. This is especially true for very large enrollment engineering prerequisite courses in physics, chemistry and math.

The LearningOnline Network with a Computer-Assisted Personalized Approach (LON-CAPA) is an open-source integrated system for online learning and assessment and has no licensing fees [1]. It provides instructors with a common, scalable platform to assist in teaching a course, from lecture preparation to administration of homework assignments and exams. It allows instructors to create educational materials and to share such learning resources with colleagues within and across institutions in a simple and efficient manner. The assignment engine can create unique homework assignments and examinations for each student in a class. The formative and summative assessment tools grade a broad variety of objective problems and assist in evaluation of essays. It provides prompt feedback for students and instructors, as well as statistical information on performance and on effectiveness of materials. Discussion pages attached to every homework assignment or other resources presented to students encourage communication among students and faculty.

PREREQUISITES

Familiarity with the use of browsers (IE, Netscape, Firebird...) is essential. Some knowledge of a coding language such as Basic or Perl is useful for those interested in developing complex exercises for which templates are not currently available. Installing the system requires help from system administrators.

WHAT WILL BE LEARNED

A brief summary of the technology uses in a large course where significant improvement in student performance has been measured will serve to introduce and focus on the key features of the system [2]. Participants in the workshop will be introduced to and learn to use these features and to set up and operate a complete course with homework assignments, quizzes, examinations, bulletin boards, lecture materials, etc. and to use the assessment tools [3,4]. The workshop will emphasize access and use of resources already developed and freely available. Some Resource authoring, particularly using templates provided in the system, will also be reviewed.

REFERENCES

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