

One of the main subject in the new EEES model is the change for the students learning in the University. Teaching must show to the student how to learn and how to apply the theoretical knowledges to become them in practical situations. These situations are similar to real situations in their future jobs. In this activity related to the student's job are different activities and responsibilities and it will necessary to establish learning tasks in the new teaching model.

The main goal in this project is the analysis and development of a software tool for making easier for the teachers the monitoring, control and evaluation of the teaching results in the ECTS model.

For getting this goal it will make the development of rules (procedures and documents), that the students will have to follow in order to simulate the form and working protocols. A tool based on the Internet will be developed, which will establish the procedures, communication flows, products/results, control mechanisms, effort, responsibilities, etc. for each case (subject, task, practice, etc.). It can obtain various fundamental goals like: a) teaching the students to apply the contents to real and useful cases, b) teaching the students to develop its professional activity following some established rules and protocols, c) giving an incentive to the students for taking decisions and responsibilities, d) establishing a mechanism for diffusion of products that are developed by the students in order to be use it as database and information source for future students and e) giving the teacher a tool that make easier the teaching task in a natural form and proving a lot of information for evaluating the student task and improving the teaching planning in the ECTS model.

It is necessary giving the teachers suitable tools that make possible applying some guidelines. The development of these tools is complex and long, because the Universities doesn't invert the resources for these tasks, and there isn't the necessary involvement of the computers services in the University, and furthermore there isn't a real conscience of this necessity.

In other hand, the applying of the ECTS model is making that the teachers have to do a big effort, because they have to spend a lot of time to learn and apply the new teaching model. It isn't providing any reward, neither with the obtained results, or with the means provided by the University for make easier this task, or with the appreciation given for this effort.

With this project it try to study and to develop, at least an operative prototype, a tool that makes easier the teaching task for the teachers, that provides complex and truthful information about the students working, and that makes possible to put in practice the new teaching guidelines, enhancing different abilities and qualities in the students.

Although our goal is this tool makes possible the practical teaching for any subject, we concentrate our description in the computer science studies. The practical teaching consists on, in a general form, the application of the theoretical concepts to practical cases (like real cases) using the computer. This task or activity is made by the students in a group or single students, providing a product that is evaluated by the teacher. This product can be a document (formal document for the solution), an application or a program and, in the most of the cases, both of them.

The teacher has each year, for each assigned subject:

1. To propose some practical problems, generally these problems will be different to the problems in previous years.
2. To monitor the student daily work, solving problems, doing corrections, providing

solutions, analyzing obtained sub-products (documents and software).

3. To evaluate the made work, doing a thorough study that the students obtain.

During the development of this practical activity, the teacher that:

- Students work alone, with a bit or none communication between students/groups and they don't share results or cooperate.
- Students only take the responsibility of their works in the presence of the teacher. They don't accept corrections of the other students, because they don't have collaborative work and they don't delegate grants to other of them usually.
- Students tend to be self-workers, they develop their products and solutions, following the theoretical concepts, but they don't follow established rules or standard.

As we can notice with these characteristics, it is really difficult to set off the new teaching model and involve the students in the EEES framework and its activities.

Teachers in this team have been trying to solve these problems during some years, and the obtained results in the year 2006-2007 allow us to think that the mechanisms, means and techniques established are correct. In the practical teaching framework for the subject *Ampliación de Ingeniería del Software* in the year 2006-2007, we set off, without a necessary software tool, some actions that allowed us to:

- Motivate the collaborative work for the students. The results of the personal work are spread to other students, which, if it is necessary, gave corrections and improvements, and they used these results in order to develop their own activities, spreading also their results.
- Give a sense of responsibility. Students were responsible for their own work, and their results were being used by other students and vice versa. They took the responsibility for making correct and good quality product and results.
- Motivate critical thinking skills, because the student, if was necessary, corrected the spread results, giving the correct solutions.
- Motivate the use of norms, rules and standards, those were corrected by all the students and they were compulsory, it provided uniform products that were easy to transmit and reuse.
- Make easier the teacher monitoring for the students activities. It was good because of the lot information generated in the development of the students activity, the high flow of communication student-student and teacher-student.
- Provide a lot of products and information that can be used for future students.

### Goals

The main goal in this project is to analysis, to design and to development a software tool for developing, following and monitoring the practical activities of the students in the university, it will allow to stimulate the teaching of techniques, tools and in the EEES model.

This tool will accept any type of practical teaching in the university, although in this project we will take in consideration the problems of the Computer Science studies, the tool will can be integrated on the Internet/Intranet service of the University. It will work in similar way of the CMS (Content Management System), it will use public standards and software and it will give to the *Vicerrectorado de Calidad* in order to be studied, evaluated and completed, if it considered

suitable.

The teaching goals, tasks and activities that this tool will cover are:

- It will make possible to make new practical teaching activities related with the subjects (Projects).
- It will make possible to assign teachers and students to each project.
- It will make possible to configure the projects, establishing phases, activities, tasks, and calendars.
- It will make possible to assign resources (students) to the different phases, activities and tasks, and to assign responsibilities for them.
- It will establish the mechanism and the diffusion media for the works and results.
- It will establish the mechanism and correction, evaluation, improvement media for the different made activities.
- It will establish the standards for each of the tasks, communications, corrections, changes, etc.
- It will make possible to follow the different activities, to monitor them and to communicate them in a secure form.
- It will make easier to analyze and to evaluate the different activities and the made work by the students, making informs that make easier the teaching task in order to evaluate the content, the effort and the spreading.