TUNING METHODOLOGY

In the framework of the Tuning project a methodology has been designed to understand curricula and to make them comparable. Five lines of approach have been distinguished to organize the discussions in the subject areas:
1) generic (general academic) competences,
2) subject-specific competences,
3) the role of ECTS as an accumulation system
4) approaches to learning, teaching, and assessment and
5) the role of quality enhancement in the educational process (emphasizing systems based on internal institutional quality culture).
In the first phase of the Tuning project the emphasis was on the first three lines. The fourth and fifth lines received less attention due to time constraints, but they had a central place in the second phase of the project (2003-2004).

Each line has been developed according to a pre-defined process. The starting point was updated information about the state of the art at European level. This information was then reflected upon and discussed by teams of experts in the now nine subject related areas. It is the work of these teams, validated by the respective European networks, that has provided understanding, context and conclusions which can be considered valid at European level. All together, the five lines of approach allow universities to "*tune*" their curricula without losing their autonomy and at the same time stimulate their capacity to innovate.

Tuning model
Furthermore Tuning developed a model for designing, implementing and delivering curricula offered within one institution, or, jointly, by two or more institutions. The following main steps in the process for designing a study programme either a local programme or an (international) integrated programme / joint degree were identified:
1. Meeting the basic conditions:
For all study programmes:
- Has the social need for the programme on a regional/national/European level been identified? Has this been done on the basis of a consultation of stakeholders: employers, professionals and professional bodies?
- Is the programme of sufficient interest from the academic point of view? Have common reference points been identified?
- Are the necessary resources for the programme available inside or, if required, outside the (partner) institution(s) concerned?

For international degree programmes offered by more than one institution:
- Is there commitment of the institutions concerned? On what basis: an (official) agreement or a strategic alliance?
- Is there sufficient guarantee that the programme will be recognised legally in the different countries?
- Is there agreement with regard to the length of the programme to be designed in terms of ECTS-credits based on student workload?
2. Definition of a degree profile.
3. Description of the objectives of the programme as well as the learning outcomes (in terms of knowledge, understanding, skills and abilities) that have to be met.
4. Identification of the generic and subject-related competences which should be obtained in the programme.
5. Translation into the curriculum: content (topics to be covered) and structure (modules and credits)

6. Translation into educational units and activities to achieve the defined learning outcomes.
7. Deciding the approaches to teaching and learning (types of methods, techniques and formats), as well as the methods of assessment (when required, the development of teaching material)
8. Development of an evaluation system intended to enhance its quality constantly.

This process is reflected in the following flow chart:
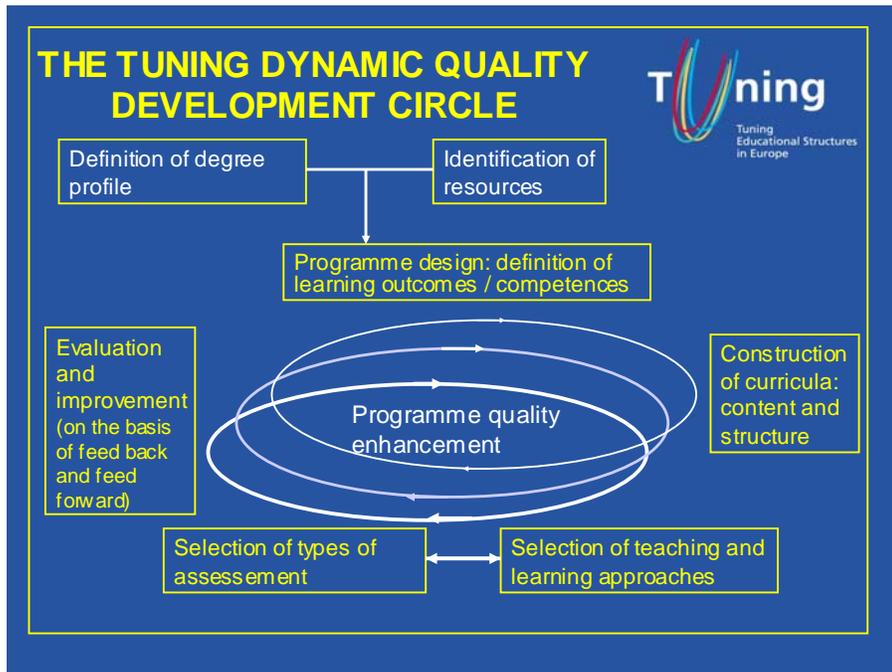
This model is based on the assumption that programmes can and should be enhanced on the basis not only of feedback but also of 'feed forward' by taking into account developments in society as well as the academic field concerned. This is illustrated by the progressive loops in the model.

ECTS
One of the main innovations of Tuning has been to link learning outcomes,, competences and ECTS workload based credits. As part of Tuning I it was necessary to develop a new concept for ECTS. This concept implies the change of the European Credit Transfer System into a European Credit Transfer and Accumulation System, in which credits no longer have a relative value but have an absolute one and are linked to learning outcomes. In the new ECTS system the award of credits depends on full achievement of the desired learning outcomes for a unit or module. The philosophy as well as its features are reflected in the paper *Educational Structures, Learning Outcomes, Workload and the Calculation of ECTS Credits,* which formed the basis for the new ECTS Users' Guide published by the European Commission in the Summer of 2004[1]

Learning outcomes and competences
The introduction of a two or three cycle system makes it necessary to revise all existing study programmes which are not based on the concept of cycles. In practice these

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[1] ECTS Users' Guide: http://europa.eu.int/comm/education/socrates ects.html.

programmes have to be redesigned because in a cycle system each cycle should be seen as an entity in itself. The first two cycles should not only give access to the following cycle but also to the labour market. This shows the relevance of using the concept of competences as a basis for learning outcomes.

Tuning makes the distinction between learning outcomes and competences to distinguish the different roles of the most relevant players: academic staff and students/learners. Desired learning outcomes of a process of learning are formulated by the academic staff, preferably involving student representatives in the process, on the basis of input of internal and external stakeholders. Competences are obtained or developed during the process of learning by the student/learner. In other words:

- Learning outcomes are statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of learning. They can refer to a single course unit or module or else to a period of studies, for example, a first or a second cycle programme. Learning outcomes specify the requirements for award of credit.
- Competences represent a dynamic combination of knowledge, understanding, skills and abilities. Fostering competences is the object of educational programmes. Competences will be formed in various course units and assessed at different stages.

Competences can be distinguished in subject specific and generic ones. Although Tuning acknowledges to the full the importance of building-up and developing subject specific knowledge and skills as the basis for university degree programmes, it has highlighted the fact that time and attention should also be devoted to the development of generic competences or transferable skills. This last component is becoming more and more relevant for preparing students well for their future role in society in terms of employability and citizenship.

Tuning distinguishes three types of generic competences:

- Instrumental competences: cognitive abilities, methodological abilities, technological abilities and linguistic abilities;
- Interpersonal competences: individual abilities like social skills (social interaction and co-operation);
- Systemic competences: abilities and skills concerning whole systems (combination of understanding, sensibility and knowledge; prior acquisition of instrumental and interpersonal competences required).

As part of Tuning I, a large scale consultation was organized among graduates, employers and academics to identify the most important generic competences for each of the academic fields involved. Although the set of most relevant generic competences differed slightly between the different subject areas, for most competences there was a striking similarity between the fields. In all fields typical academic competences were identified as being the most important ones, like the capacity for analysis and synthesis, the capacity to learn and problem solving. In particular the graduates and employers, who proved to be remarkably in agreement, showed that other generic competences as well were seen as being very important for employability, like the capacity for applying knowledge in practice, the capacity to adopt to new situations, concern for quality, information management skills, ability to work autonomously, team work, capacity for organizing and planning, oral and written communication in your native language as well as interpersonal skills. It was also concluded by graduates and employers that some of the competences mentioned above were of more use and developed to a higher level than others. They drew attention to the fact that more attention should be given to a specific number of generic competences to prepare students better for their future workplace. The outcome of this extended consultation

process can be found in the publication which resulted from the Tuning I project as well as on the Tuning website.

Subject specific competences have been identified already for nine subject areas e.g. Business Administration, Chemistry, Education Sciences, European Studies, History, Geology (Earth Sciences), Mathematics, Nursing and Physics. These sets of competences are reflected in documents prepared by each of the nine subject area groups of the project.[2] As already stated in the introduction to this book the approaches of the nine groups differed, because of differences in the structure of the disciplines; nonetheless, all groups followed a similar procedure to obtain their results. Through discussion, creation of reciprocal knowledge and mapping the ways the subject area is learned and taught in the various countries, insight was gained and consensus built on what constitutes the vital core of each subject area. The documents which resulted should be understood to be working documents, subject to further elaboration and change.

In Tuning competences are described as <u>reference points</u> for curriculum design and evaluation, not as straightjackets. They allow flexibility and autonomy in the construction of curricula. At the same time, they provide a <u>common language</u> for describing what curricula are aiming at.

The use of learning outcomes allows for much more flexibility than is the case in more traditionally designed study programmes, because they show that different pathways can lead to comparable outcomes; outcomes which can be much more easily recognized as part of another programme or as the basis for entrance to a next cycle programme. Their use fully respects the autonomy of other institutions as well as other educational cultures. Therefore this approach allows for diversity, not only in a global, European, national or institutional framework, but also in the context of a single programme. This concept is summarized in the following scheme:
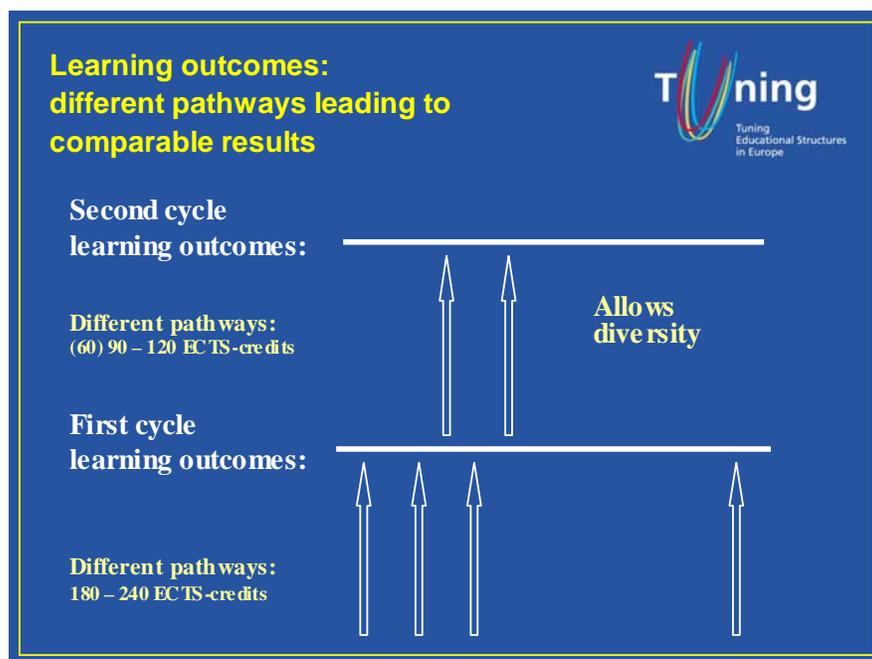

Student centred

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[2] These papers can be found on the Tuning Website as well as in the first Tuning book.

The use of learning outcomes and competences is necessary in order to make study programmes and their course units or modules student centred / output oriented. This approach requires that the key knowledge and skills that a student needs to achieve during the learning process determine the content of the study programme. Learning outcomes and competences focus on the requirements both of the discipline and of society in terms of preparing for citizenship and employability. Still today, many study programmes are staff centred, which means in practice that they are input oriented. They often reflect a combination of the fields of interest and expertise of the members of staff. In effect this leads to programmes of rather loose units which might not be sufficiently balanced and most effective. Although Tuning recognizes fully the importance of making maximum use of the available expertise of the staff, this aspect should not dominate a programme.

In an output based study programme the main emphasis lies on the degree or qualification profile. This profile is determined by the academic staff and endorsed by the responsible authorities. The profile should be based on an identified and recognized need by society -- in practice internal stakeholders, that is the academic society, as well as external stakeholders like employers (organizations), graduates and professional organisations.   All have their place in deciding which competences, generic and subject-specific, need to be emphasised and to what extent. Although every programme profile is unique and based on the judgements and decisions of the academic staff, this staff has to take into account specific features which are seen as being crucial for the subject area concerned. In other words: what makes a business programme a business programme. In the framework of Tuning groups of academics have defined these sets of features for their own discipline. These are reflected in so-called Templates, or Summaries of Outcomes containing synthetic indications within a common format, which are based on more extensive papers.

In a cycle system each cycle should have its own set of learning outcomes formulated in terms of competences. This can be visualized using the following scheme:
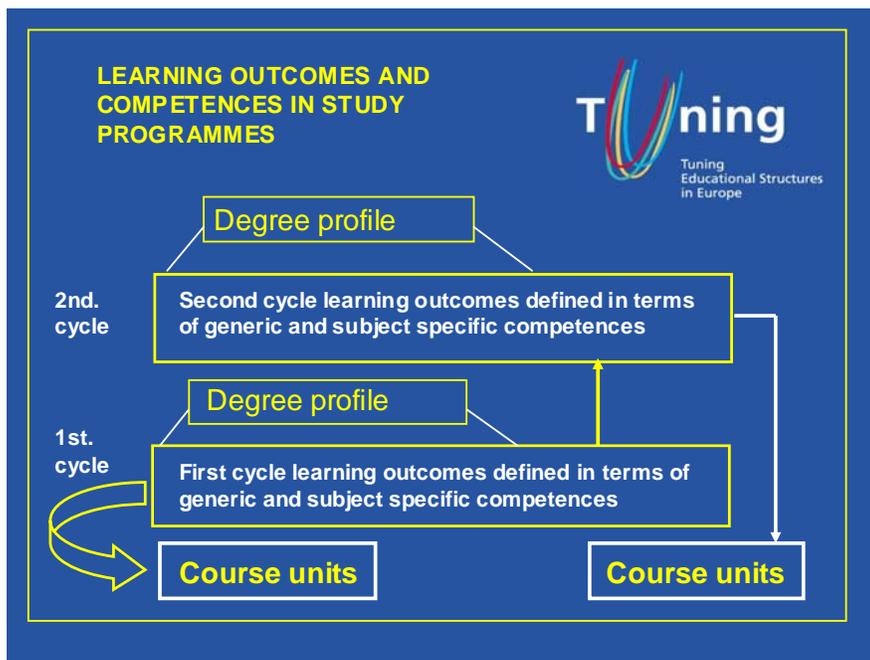
As stated before, learning outcomes are formulated both at programme level and on the level of individual course units or modules. The learning outcomes of the individual

units add to the overall learning outcomes of the programme. The situation for the competences to be acquired is more or less comparable. Competences are developed in a progressive way. This means that they are formed in a number of course units or modules at different stages of the programme. During the design phase of the programme it has to be decided in which units a particular competence has to be formed. Depending on the size of a unit or module Tuning is convinced that it is advisable not to include more than six to eight competences in the learning outcomes for that unit. Although there might be competences which can be trained implicitly in a programme, only competences which can actually be assessed should be mentioned explicitly. The following scheme shows a possible approach for dividing competences over course units or modules.

LEARNING OUTCOMES AND COMPETENCES IN STUDY PROGRAMMES

T ning
Tuning
Educational Structures
in Europe

Example

Course unit/ learning outcome	Competence									
	A	B	C	D	E	F	G	H	I	F
Unit 1		X			X					
Unit 2	X			X			X			
Unit 3		X				X			X	
Unit 4	X		X							X

X = THIS COMPETENCE IS DEVELOPED AND ASSESSED AND IS MENTIONED IN THE LEARNING OUTCOME OF THIS UNIT

As has been shown above, for Tuning, a study programme is not a summing-up of a number of loosely related course units; it must be handled as an entity in itself. This requires a more holistic approach. In a student centred- / output-oriented study programme, all units in one way or another are related to each other. This not only applies to the units or modules which are part of the major or the core part of the programme, but also to minor courses and electives. In a well designed programme, minors and electives should strengthen the profile of the programme.

In the vision of Tuning a study programme can be seen as a large cake, with different levels, in which all slices are linked to one other, either in a horizontal or in a vertical way. In more formal educational terms: the learning outcomes of the individual units or modules add to the overall learning outcomes and to the development of the level of competences, taking into full consideration the learning outcomes to be achieved in other units. This concept can be visualized in a more schematic form as the following model shows:

FIRST CYCLE PROGRAMME

60 ECTS

60 ECTS

60 ECTS

Sem. 6

Sem. 5

Sem. 4

Sem. 3

Sem. 2

Sem. 1
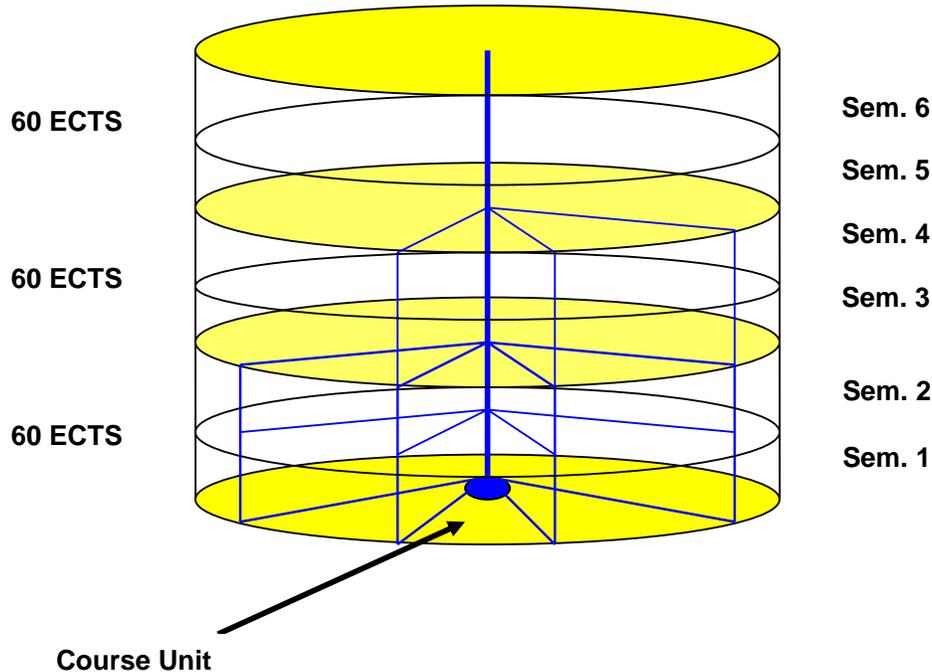
Course Unit

The model presumes progression regarding the achievement of learning outcomes expressed in terms of competences. Each course unit has a role in the overall curriculum. It distinguishes three periods of 60 credits which again are subdivided into two. This is the more traditional way a programme is taken: semester by semester. However, it also shows that other options are possible. For example a student can study one part of a programme in greater depth, by taking two units (or slices) in a vertical way if the prerequisites (entrance conditions) of this unit allow this. One can imagine that a student studying a language will focus first on language acquisition and will then concentrate on either literature or linguistics, although the official order of the programme might be different. It also shows that separate units, followed successfully in another context, can be fitted into the study programme on the basis of prior recognition. In a life long learning context and in more flexible programmes this might be very relevant.

One of the main objectives of the Bologna process is to make study programmes and periods of learning more comparable and compatible. This objective is strongly promoted by making use of the concept of levels, learning outcomes, competences and ECTS credits. A further way to promote this aim is to base study programmes on units of equal size. Modularization of educational programmes will promote transparency, and will facilitate mobility and recognition. It may also help to make programmes more feasible to study, because it offers an instrument to balance the student workload over the different phases of the programme.

Levels
The use of cycles automatically includes the introduction of the concept of levels. A distinction can be made between levels for a cycle and levels within a cycle. For each

of these level indicators can be used. They are called <u>level descriptors</u>. As part of the Bologna Process, a group of experts, the so-called Joint Quality Initiative, has developed sets of general descriptors for each cycle, which are called the Dublin descriptors. These cycle descriptors have now been endorsed by the European Ministers of Education as part of the report *A Framework for Qualifications of The European Higher Education Area*. The approaches of Tuning and the JQF are fully compatible and complementary.

Because cycle descriptors in practice are level descriptors which identify the level of a cycle, Tuning has suggested naming these descriptors <u>cycle level descriptors</u>, to distinguish them from <u>intermediate or sublevel descriptors</u>. Tuning has produced cycle level descriptors at programme level for the first and second cycle for each of the subject areas included in the project. It has also debated the possibility of developing sublevel descriptors but has not yet come to a final conclusion. One can imagine, for example, that the following sublevels can be distinguished in university first cycle programmes: basic or fundamental, intermediate and advanced. For a second cycle programme a distinction might be made between the sublevels: advanced and specialized.