

The actions that have been undertaken for the promotion of Bologna Process aim at the transformation of Europe into the most competitive and dynamic economy capable to achieve even a greater social cohesion.

Bologna Declaration stipulates that European Higher Education Area should benefit of the synergies of research consolidating, in such a way, a Europe of knowledge. Among the goals of Bologna Process there is one tending to preserve cultural wealth and linguistic diversity of Europe by overall cooperation among European higher education institutions.

In the same context, it might be affirmed that the employment market should be unique for Europe, but the educational system being too diverse and with rather few inter-connections comes as an impediment leading to the decrease of competitiveness.

Bologna Declaration envisages

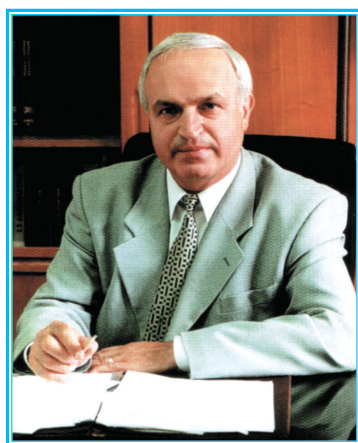
two years already.

• **Adoption of a higher education system based on two cycles.** All signatories of Bologna Declaration committed themselves to start the implementation of the mentioned system until 2005. Similar to signatory countries in the Republic of Moldova work is done on this concept too. Concerning engineering education the Technical University proposed the approval of two cycles: first cycle – 3-4 academic years (180-240 credits) and the second cycle to be 1-2 years of Master's studies (60-120 credits). Taking into account the peculiarities of engineering education it is preferable to have 4 years for the first cycle. (Fig.1)

Three years studies in engineering education risk not to correspond to the level of qualification necessary for placement in the European labour market. Regarding the second cycle, that enrolls nowadays only graduates of the similar profile/specialization, it can be modified by admission to Master's programmes for all applicants despite their profile/specialization.

• **Implementation of the credit system.** The European Credit Transferable System (ECTS) is being implemented at TUM for four years already. This implementation will play an important role in facilitating students' mobility and in developing an international curriculum.

• **Promotion of mobility** (students, academic and administrative staff) represents the basis for the construction of the European Higher Education Area (EHEA). This challenge will lead to the increase in



BOLOGNA PROCESS: OPPORTUNITIES AND RISKS FOR HIGHER TECHNICAL EDUCATION

a programme of fundamental changes in European higher education that will bring us to the harmonization of Diploma structure and to overcoming any obstacles to mobility of teachers and students.

The objectives of Bologna Declaration and the activities carried out at the Technical University of Moldova in this context are mentioned below:

• **Adoption of a system of comparable and well-defined degrees,** mutual recognition of diplomas. Here, it is essential to mention the significance of Diploma Supplement which should favour the integration of European citizens in the labour market and improve the competitiveness of the educational system. In this part it is important to mention that TUM issues Diploma Supplements (in conformity with European requirements) to all graduates from the university for

the quality of education offered by the universities. But, the existing barriers to the free motion of citizens and the precarious economic situation, as well, do not allow today active participation of Moldovan youth, fond of learning, in these actions. Recently, mobility is limited to the scholarships offered to Moldovan students by various foundations and European universities.

• **Quality assurance.** The quality of higher education is the foundation for constructing the European Higher Education Area. More and more it is emphasized the necessary to develop mutually acceptable criteria and methodologies for quality assurance at institutional, national and European levels. In this context, ministers of education from the signatory countries decided that till 2005 the national quality assurance systems should include:

- Definition of responsibilities for the involved authorities and institutions
- Assessment of programmes or institutions, including internal evaluation and external accreditation

- A system of accreditation, certification or comparable procedures
- International participation, cooperation and organisation of networks

Quality assurance is the part on which the Technical University of Moldova is focusing its actions by

- Design and implementation (starting 2005) of the System of Quality Management (SQM) at institutional, faculty and departmental levels. These activities are referring to the

Step by step, building a European Higher Education Area, in the context of the Bologna Process:

- academic recognition based on a system of comparable degrees;
- promotion of higher education system consisting of 2 cycles;
- implementation of higher education system based on transferable credits;
- promotion of mobility among students and teachers;
- compatibility and quality assurance of higher education.

phases of preparation, training, implementation, testing and certification of SQM. More persons, experts in the field, from inside and outside the university, including participation of foreign experts - licensed auditors in SQM have been co-opted in these activities;

- At the beginning of 2004 persons responsible for promotion of SQM at institutional and faculty levels have been appointed ;

- Systematically, various opinion polls of students and academic staff are organised. Their aim is to trace out and remove the appeared/existing deficiencies in the educational process. The results of the polls have been analysed at all administrative levels and depending on the expressed opinions solutions are looked for their improvement/removal;

- Doubling of the Catalogue of specialisations after Declaration of Independence of the Republic of Moldova.

Weaknesses

- Expansion of higher technical education is not complimented by improvement of quality of studies;
- 50-60% of students matriculated in the 1st year have a pre-university preparation under the level of competitive education requirements;
- Recent structure of curriculum is not flexible and does not support mobility;
- Modern system of teaching and salaries does not offer sufficient freedom or incentives for excellence;
- The infrastructure does not correspond to the requirements, in particular, concerning new spe-

- Labour market is being analysed permanently in order to determine what specialists are demanded by the developing economy (globalists or specialists with narrow preparation, designers/researchers or for

- cializations;
- The level of research financing is much lower than in European Union.

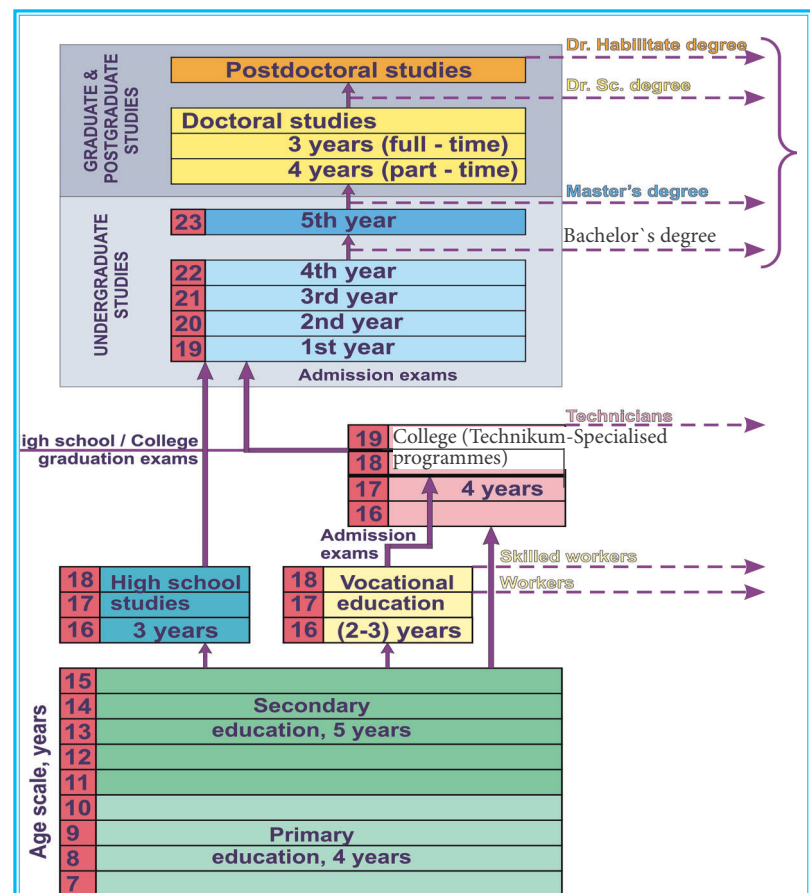
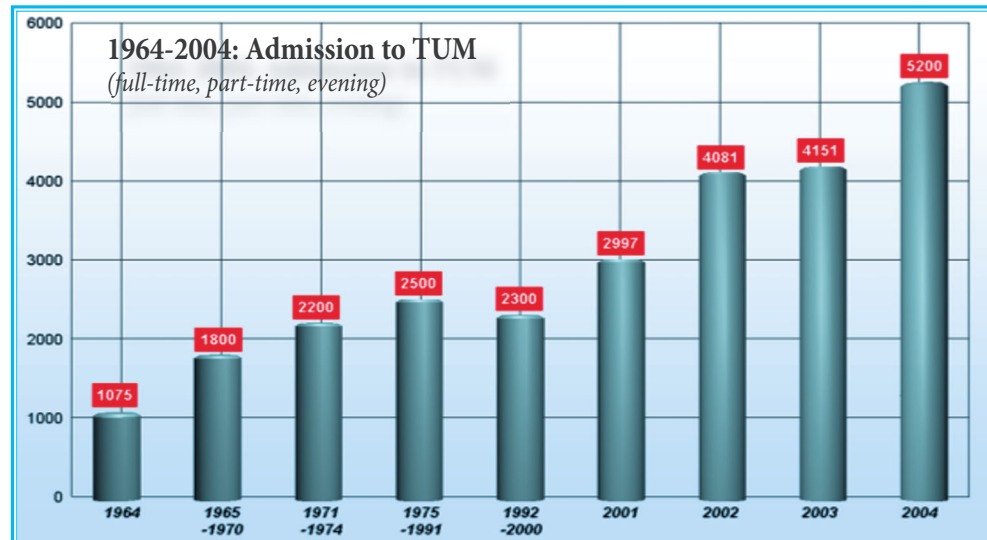


Fig. 1 SCHEME OF ENGINEERING EDUCATION



production activities, etc.);

- Existing teaching technologies are adjusted to the market requirements and new technologies are developed according to the market demands;
- Financing mechanism of universities is modernised;
- A Permanent Monitoring Council for the implementation of quality at various university levels has been set up.

Joining of higher technical education to the requirements of Bologna Process can be performed on the basis of

- accomplished achievements
- weaknesses clearing up
- Future solution of some opportunities peculiar for the existing situation in education

The three components could be as follows:

Achieved results

- Expansion of higher technical education motivated by considerable growth in the number of students registered in the 1st year of studies (Fig.2);
- Outstanding talents, winners of prizes and scholarships for studies in other countries;
- Traditions and experience in the field of education and engineering sciences;

Opportunities

- Joining of education and research to European standards of quality
- Assurance of competitive knowledge and abilities by differentiate assistance offered to students;
- Top-notch instruction for gifted students (special academic groups via contest examination);
- Supplementary instruction during the first 2-3 terms for students with pre-university education under the average level of knowledge;
- Establishment of the infrastructure for Centres of Excellence according to fields, Centres for creativity, research and technology transfer;
- Implementation of a system of salaries for academic and research staff based on performances and competitiveness;
- Strengthening relations "education-research-economy", extension of job fairs for specialists;
- Extension of participation in international programmes assisting education and research - an important source for financial support and for integration of education and research into European and international areas.

Academician Ion Bostan,
Rector