

Informatics Management Systems for Quality Management Improvement in Higher Education and Scientific Research **SIMCEC**

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Resources follow quality



TECHNICAL UNIVERSITY OF CIVIL ENGINEERING BUCHAREST



Faculty of Civil,
Industrial and
Agricultural Buildings



Faculty of
Building
Services



Faculty of
Hidrotechnics



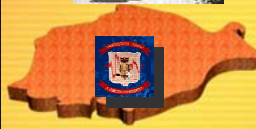
Faculty of
Technological
Equipment



Faculty of
Railways, Roads
and Bridges



Faculty of
Geodesy



The whole set of rights and obligations as well as the norms underlying the life of the university community in Romania are:

National legislation for HE &R

- Law on Accreditation of Higher Education Institutions & Recognition of Diplomas no.88/1993 modified 144/1999;
- Education Law no. 84/1995, republished;
- Statute of Teaching Staff (Law 128/1997), republished;
- Law no.62/2002 for the approval of the Government Ordinance no.60/1998 on the setting-up of Romanian university extensions abroad;
- Law on university consortia no.287/2004;
- Law on the organization of university studies no.288/2004;
- Government Decision on the organization of *License university studies no. 88 of 10 February 2005*;
- Government Decision concerning doctoral studies no.567/2005;
- Emergency Ordinance on Quality Assurance in Education no. 75/2005.



continued

Internal assessment of HE &R quality

- Quality management systems. Requirements – ISO 9001: 2008 (voluntary);
- IWA 2: 2006 - Quality management systems - Guidelines for the application of ISO 9001:2000 in education, made the standard easier to understand and implement by the education sector (voluntary).

External assessment of HE &R quality

- The Romanian Agency of Quality Assurance in Higher Education – ARACIS, an independent public institution with competences in accreditation, academic evaluation and quality assurance;
- National Qualification Framework for Higher Education (NQFHE) - as the single tool that determines the qualifications structure and ensures the national recognition.

The guidelines of quality assurance for Romanian HE &R are permanently correlated to the actions supported at the European and world level.



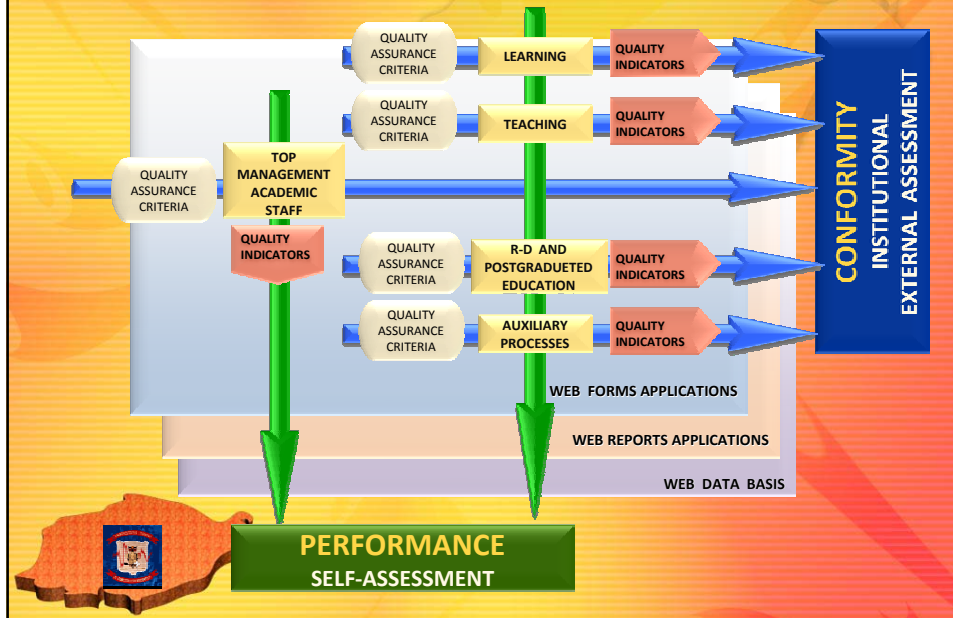
What is SIMCEC?

An experimental informatics system which explore use of performance criteria and performance indicators for HE &R, in an internal quality assurance framework (ISO 9001: 2008 implemented).

An integrated system for the collection, processing, editing and multidimensional analyses of statistical data.



DATA – MODEL FOR INTERNAL QUALITY ASSURANCE



The background

CONFORMITY External Quality Assurance INSTITUTIONAL EXTERNAL ASSESSMENT

CRITERIA:

- mission of the university; links between planning, resources allocation and quality management (institutional capacity)
- teaching and learning, research and community engagement (educational efficacy)

continued

PERFORMANCE Internal Quality Assurance SELF-ASSESSMENT

CRITERIA:

- policy and procedures for quality assurance;
- approval, monitoring and periodic review of programs and awards;
- assessment of students;
- quality assurance of teaching staff;
- learning resources and student support;
- information systems;
- public information.



continued

Links between public resources allocation (PRA) and quality assurance:

**Full – Time Equivalent Student
 (70% from PRA)**

+

**13 quality assurance criteria, structured in 4
 groups
 (30% from PRA)**

- Quantitative criteria
- number of full-time students
 - cost-per-student
 - per study programs
 - per level of studies

merging

- Qualitative criteria
- teaching personnel
 - impact of research activity on teaching process
 - material support
 - academic management



Key issues

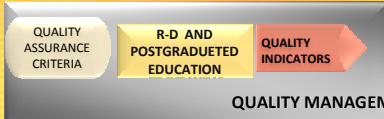
- the absence or insufficient knowledge / abilities in HE & R of quality management personnel;
- the inadequation of educational standards;
- the ignorance of techniques and tools of quality management;
- conceptual work: “correct nonconformities to prevent recurrence” instead of “prevent the occurrence of nonconformities”;
- the absence or insufficient objectives (with indicators and values), policies, strategies in quality area, on short, medium and long terms;
- excessive believe in quality system documents (including system certification) to the prejudice of managerial decisions and quality assurance regulated actions;
- Romania does not have an official system of university ranking measuring education quality.



How are we going to resolve the issue based on the results of experiments on SIMCEC?

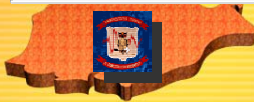


Informatics System for Scientific Research – technical modules



- design inputs (material, financial, human)
- design outputs
- design and development verifications
- design and development validations
- purchasing and purchased products
- product characteristics

WEB FORMS APPLICATIONS



- research income collection by detailed funding category
- research publications collection
- patents collection
- research in progress
- research performance by faculty and all sections
- Performance benchmarking – relative standardized performance by faculty / by indicator

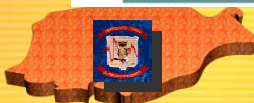
WEB REPORTS APPLICATIONS

- human resources
- special lab equipment
- research income by funding category
- research publications
- research projects
- patents
- research prizes
- research centers

WEB DATA BASIS

continued

<http://dcpc.utcb.ro/>



continued

Performance indicators for scientific research process

Universitatea TEHNICA DE CONSTRUCȚII BUCUREȘTI

Raport de autoevaluare

4. Criterii primare de performanță 19316

4.1. Lucrări științifice / tehnice publicate în reviste de specialitate cotate ISI 1171.5

4.1.1. Număr de lucrări științifice: 29 x 30 = 870

4.1.2. Punctaj cumulativ ISI: 51.317 x 5 = 256.58

4.1.3. Număr de citări în reviste de specialitate cotate ISI: 9 x 5 = 45

4.2. Brevete de invenție 305

4.2.1. Număr de brevete: 10 x 30 = 300

4.2.2. Număr de citări de brevete în sistemul ISI: 1 x 5 = 5

4.3. Produse și tehnologii rezultate din activități de cercetare, bazate pe brevete, omologii sau inovații proprii. Studii prospective și tehnologice și servicii rezultate din activitatea de cercetare-dezvoltare, comandate de beneficiar 892 x 20 = 17840

5. Criterii secundare de performanță 13820

5.1. Lucrări științifice (tehnice) publicate în reviste de specialitate fara cotație ISI 126 x 5 = 630

5.2. Lucrări științifice prezentate la conferințe internaționale cu comitet de program 1215 x 5 = 6075



continued

5.3. Modele fizice, modele experimentale, modele funcționale, prototipuri, normative, proceduri, metodologii, reglementări și planuri tehnice noi sau perfecționate, realizate în cadrul programelor naționale sau comandate de beneficiar 1423 x 5 = 7115

6. Prestigiul profesional 3600

6.1. Membri (incluzând statutul de recenzori) în colectivele de redacție ale unor reviste (cotate ISI sau incluse în baze de date internaționale) sau în colective editoriale ale unor edituri internaționale recunoscute 4 x 20 = 80

6.2. Membri în colectivele de redacție ale revistelor recunoscute național (din categoria B în clasificarea CNCIS) 1 x 10 = 10

6.3. Premii internaționale obținute printr-un proces de selecție 2 x 20 = 40

6.4. Premii naționale ale Academiei Române 89 x 10 = 890

6.5. Conducători de doctorat, membri ai unității de cercetare 258 x 10 = 2580

6.6. Număr de doctori în știință, membri ai unității de cercetare 36736

Total punctaj: 36736



How will SIMCEC change the way of viewing the concept of quality assurance



Internal Quality Assurance

- Rigorous ex post control of funding;
- The planning and concrete realization of the expected results of learning, teaching and research activity;
- Monitoring results;
- Internal assessment of results;
- External assessment of results;
- The ongoing improvement of results in HE & R.

External Quality Assurance

- Assessment of the institutional ability of the organization providing education;
- Assessment of the quality management at the institutional level;
- Assessment of the accordance between the internal evaluation and the real situation;
- Comparative trans-institutional assessment of the same type of study program offered by different organizations providing education.

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Thank you for your attention!

Any questions?

