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I.T.C. TRAINING PROGRAM – CASE STUDY

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Abstract: *The purpose of the **Informative Techniques and Computer-based Communication Training Program** is the initiation of the academic personnel, those with didactic, guidance, control or leading functions, in using ,development or involving a set of particular computer skills.*

This continuous training program also covers one of the objectives of the educational and professional training systems specified by The European Council and The European Commission, namely The access' insurance to ITC for all, taking account of a group of generic professional standards. Within this continuous training program, the differentiation of the practical and theoretical applications will be taking into account the level of vocational training on the student.

This program consists of only 110 classes performed in the methodology day of the engineers (on Wednesday) and on Saturday. The trainers have different specializations covering the entire speciality.

The included disciplines in this training program are defined by valid scientific and cultural contents; the subjects are well circumscribed, challenging and related to the target objectives.

Reuse of this module in the same program or transferring it into other programs can increase the effectiveness of educational programm.

Keywords: ICT, web 2.0, education

1. The Description of the Program

The "Informative Techniques and Computer-based Communication" Training Program ITC adds in "The Training of the Professors Engineers Program" which included only two modules (The Adjudication CNFP no. 220/19.12.2007):

Tehnici informationale si comunicare computerizata



PROGRAMUL DE FORMARE A PROFESORILOR INGINERI
DPPD - UPB & Colegiul "Gh. Airinei"

Module 1: Setting, organization and valuation of the didactic activities - 30 credit points

IMPERATIVE DISCIPLINES :

Curriculum training and valuation (IOb1); The speciality's didactics (IOb1a); Speciality disciplines (IOb2a)

FACULTATIVE DISCIPLINES :

Pack A: Teaching/Learning strategies and models; recent development (IOp1A1); Knowing the students and the school group personality (IOp1A2)

Pack B: Modern working instruments (Web2.0 correlated to technological curriculum areas (IOp1B1); Technological training (modular curriculum approach) (IOp1B2); Methods of research in education (IOp2.1.); Recent development about the teacher's evaluation competence (IOp2.2.)

Module 2: Management and communication - 30 credit points

IMPERATIVE DISCIPLINES:

Psychopedagogy of Communication (IIOb1);
Management of the classroom (IIOb2)

FACULTATIVE DISCIPLINES :Quality
management in education (IIOp1.1);
Professional development and career
management (IIOp1.2); Project management
(IIOp1.3); Creativity through/in the learning
process (IIOp2.1); The leader's behavior and
decisions and the adoption process (IIOp2.2)

To ensure that the continuity of The
Training Program addressed to the dons, senior
staff and guidance personnel will be complete and
also, to make possible the issue of the 90 points
certificate transferable by CNFP, it was accredited
**The "Informative Techniques and Computer-
based Communication" Training Program**
representing Module 3-TIC, a first class program,
short type (within the meaning of article 33, first
paragraph, Law 128/1997).

Module 3: T.I.C. - 30 credit points

- Decision CNFP no. 72/28.05.2008

- Affinity Program with The Post and
Telecommunication Technical College
"Gheorghe Airinei"

The purpose of the **Informative
Techniques and Computer-based
Communication Training Program** is the
initiation of the academic personnel, those with
didactic, guidance, control or leading functions, in
using ,development or involving a set of particular
computer skills through 7 thematic categories:
Basic concepts in Information and Communication
Technologies; Using the computer and managing
files; Ability to edit texts and image processing;
Creating presentations; Spreadsheets; Database;
Internet – communication and documentation

Who participates at the program?

Teachers – engineers and dons from the
undergraduate education with didactic, guidance,
control or leading functions.

How long does it take the program?

At the moment a third series completed in
June 2009 Module III –ITC. The first series
completed in June 2008 and the second in
February 2009.

The justification and the utility of the program

- The agreement with the national politics and
with the learning development strategies

The continuous training programs may
have numerous purposes and may address to a
wide range of needs from those which are pursued
by the educational priorities at national level to the
needs of the schools, professors, individuals or
local communities.

All approved CNFP programs are being
designed according to "CNFP Methodology"
which forecast the reporting to the national
priorities in this domain.

This continuous training program also
covers one of the objectives of the educational and
professional training systems specified by The
European Council and The European Commission,
namely: *The access' insurance to ITC for all*

- The numerical growth of the
equipment and educational software so
that ITC will be implemented successfully
in teaching and training practices;
- The adaptation of the teaching
methodes and the role of the teachers and
educators in using up the "real" and
"virtual" teaching techniques.

It promotes the professional standards of
the didactic occupation according to MECT,
CNFP purviews and other official documents.

Nowadays, the continuous training
programs are elaborated and evaluated interrelated
with a group of generic professional standards
which don't discriminate between the initial
professional training, the training of the beginner
professors or of those that already have different
professional distinctions expected in career
development.

Within this continuous training program, the
differentiation of the practical and theoretical
applications will be taking into account the level
of vocational training on the student
(beginner/advanced). For the students with high
level knowledge of TIC will be suggested to
participate at The Informative Techniques and
Computer-based Communication Training
Program – "advanced level" (25 credit
proffesional transferable points), the second
category program, approved by Decision CNFP
no. 65/28.05.2008 (89 classes)

The Informative Techniques and
Computer-based Communication Training
Program – "advanced level" is addressed to the
dons, senior staff and guidance personnel,
proffesors which already have TIC knowledge (
beginner level, ECDL certificate, faculty
diploma/post academic course in the field).

*What resources (human, material, time) are
spent in using the program?*



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This is a short program with only 110 classes according to the following curriculum. These classes are performed only in the methodology day of the engineers (on Wednesday) and on Saturday. The trainers have different specializations covering the entire speciality.

- the attainment of knowledge and skills in using ITC and a positive attitude regarding this matter;
- the training in using the ITC/ the familiarization with the operating system (the professors must be able to use the computerised equipment in a critical and structural manner, as instruments used in fulfilling the tasks.
- the identification of the using possibilities of the computer;
- the discrimination between hard and soft components of the computer;

**CURRICULUM
for THE INFORMATIVE TECHNIQUES
AND COMPUTER BASED
COMMUNICATION**

	Discipline	No of classes assigned				No. CPT
		Basic training course	Tutorial	Ev.	Total	
Module .I.T.C.	Base concepts in in Information and Communication Technologies	4	4	1	9	3
	Using the computer and managing files	5	6	1	12	3
	Ability to edit texts and image processing	6	10	1	17	5
	Creating presentations	6	10	1	17	5
	Spreadsheets	6	10	1	17	4
	Database	6	10	1	17	5
	Internet – Communication and Documentation	6	10	1	17	5
EVALUATION DURING THE CLASSES				7		
FINAL EVALUATION					4	
TOTAL CLASSES (NO)					110	30

2. The Clarification of Evaluation Objectives

The basic training course complies with the contents of the curriculum for passing the ECDL (European License for Driving the Computer) exam (according to Annex 13-Magazine CNFP no 3-4), but follows it in another matter, into a collaborative medium, so that after taking the course, the student must be acquainted in using the computer and its offered possibilities for different interacting types, know how to integrate multimedia materials in didactical projects without any difficulties.

Tutorials contribute to:

- the training for familiarization with the operating system regarding hardware and software equipment, communication through computer network (local database or remote access);
- the development of the competences in using different software (MS OFFICE, Open Office for example);
- the development of the communication and cooperation in interactive contexts;
- the implementing of the ergonomics rules and legislation regarding computer use / computer network;
- daily use of the computer;
- the development in individual working/ training the students in collective works;
- the development of Information culture.

The scientific, pedagogical and cultural relevancy of the content

The included disciplines in this training program are defined by valid scientific and cultural contents; also, they are updated and judiciously structured; the subjects are well circumscribed, challenging and related to the target objectives.

The proportion between theory and practice in favour of applicative activities;

The proportion between theory and practice in favour of applicative activities is established by *The Trust Methodology Regarding the Continuous Training Programs*. It forecasts various shares of the theoretical, practical and valuation on modules activities. As you can see in Figure 1, to each

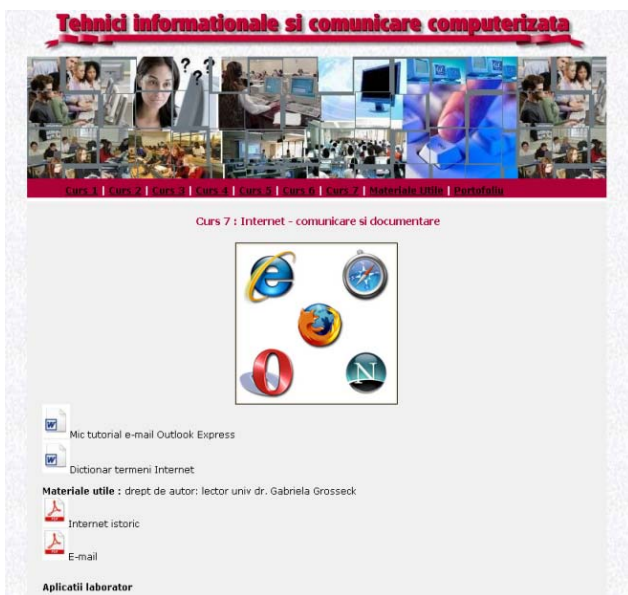


Figure 1

module corresponds a web page. Within those web pages, the students have the possibility to access tutorials, to read support courses as well as practical applications (including tutorials for solving the tasks). Each module is completed with a certain applicative homework which must be included in the final portfolio. This homework is graded along the course.



The logical and pedagogical distribution of the training

Concerning the number of didactical activity classes, scheduled per week, it is oversized at 8-9 hours a day.

The program provider offers feed back related to the training program, through the Moodle, so that many proffesors can run some of their practical activities from school or home, without being necessary their presence in the laboratory (Figure 2).



Figure 2

3. The Assesment of Information Resources (the research of the available data relevancy)

Using the modern teaching equipment

The integration of the new information and communication practices in the continuous training program led to:

- the valorization of the new information and communication technologies by including them in the learning process;
- providing examples of combining traditional methods with those based on e-learning in working with students; training professors to guide students in using websites useful in studying of a discipline or to use smart-phones and digital cameras in teaching and learning (creating new materials, adapting to their personal learning styles, exercises in the acquisition and use of digital images);



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- developing competent teachers in view of elaboration teaching materials with didactic nature.

The development and use of complementary curricular materials

Course support, educational software, tutorials, Internet services and literature are the main sources of documentation and learning. All these materials and information are provided by the platform program. Full bibliography is organized in two sections:

- required references – with a reasonable number of new works, active links, tutorials addresses on levels of competence;
- optional references allowing those interested in deepening the study individually.

Organizational Details

The program also offers a web site dedicated to issues of organization: time, ads, study formations associated with each module. Through this page, students were able to highlight some organizational problems, which are solved in due time by the program provider.

What changes have occurred in the level of the training provider as a result of the unfolding program?

After each set of students, following analysis of questionnaires, it was inserted and adjusted a whole series of practical applications for each level: beginner/advanced; tutorials were created for students, etc...

4. The Design Evaluation by establishing methods, selection of comparison groups

The choice of methodology depends on:

- what we want to evaluate;
- the available time;
- financial constraints;
- implementation capacity

The project offers a variety of assessment methods, able to cover all the skills and expected developments.

The requested feedback from students is one of the main sources of improvements without stopping of the program.

Setting the comparison groups

The impact assessment has considered making significant comparisons between:

- the situation before and after intervention implementation (practical tests at the beginning and in the end of the activity)
- the effects of intervention on a group against any similar group (work teams)
- a group on whom you spoke and a "control" group (what happened and what could have happened without that intervention; we compared the e-portfolios of the students with those of participants in teaching degrees, who have not followed this module)
- effects of intervention on similar groups in different parts of the country (this criterion was achieved by group 1 and group 2 actually formed of professors from Bucharest, while the group 3 consisted in professors from Ilfov.

Data collection was carried out by making use of methodologies:

- quantitative
- qualitative
- participatory

The data subjected to processing were:

- questionnaires
- analysis of written documents
- analysis of practical works
- focus groups
- case study

The results are given in the report of assessment.

5. The Training Team of Evaluators

Assessment activity requires specific competences.

Quality impact assessment increases considerably in terms of external coordination between:

- the members of the research team;
- the initiators of the program.

The first team includes the evaluation manager, analysts in the social sciences, sampling expert, field team, those who process and structure the data.

The Evaluation Manager is responsible with:

- the determination of the information needs and the identification of indicators
- shaping the terms of reference for the other members of the team
- the selection of evaluating methodologies
- the composition of the team

The Analysts in the social sciences

- contribute to the writing assessment report

The Sampling Expert

- guides the selection process of the sample
- calculates appropriate sample sizes for the indicators set
- selects the sample
- reviews the outcome of the current sample compared to the default and incorporates all in analysis
- selects sites and groups for pilot tests

The Design Research Team

- projects the data collection tools, brochures User Manuals and codes
- ensures along with the Team Manager that data collection tools are valid and correctly applied

The Field Team

- is responsible for the whole approach of collecting data
- plans routes for collecting data
- establishes the composition of the team: operators, researchers

Those who process and structure the data

- design programs for entering data
- store data
- check the validity of such data
- produce primary results
- provide necessary documentation with regards to data

2. The Assessment Report

After the three series of students, the graduated percentage was:

Series 1: Students : 120 people (17 executives/school inspectors); No. of students who completed the module: 106 people - 56 with “exceptional” grade, 38 with “very good” grade, 12 with “good” grade)

Series 2: Students : 107 people (5 executives/school inspectors); No. of students who completed the module: 94 people - 37 with “exceptional” grade, 53 with “very good” grade, 4 with “good” grade)

Series 3: Students : 75 people (7 executives/school inspectors); No. of students who completed the module: 66 people - 46 with “exceptional” grade, 18 with “very good” grade, 2 with “good” grade)

After the data were collected, were processed the following[9]:

To what extent the current themes and applications activities contributed to the clarification of some current issues that you may face in your class activity?

	<i>Specified Aspect</i>	<i>Very much</i>	<i>Much</i>	<i>Satisfactory</i>	<i>Insufficient</i>
a.	Basic concepts in Information and Communication Technologies	56,25%	27,5%	2,5%	0%
b.	Using the computer and managing files	53,75%	31,25%	1,25%	0%
c.	Ability to edit texts and image processing	60%	25%	2,5%	0%
d.	Creating presentations	55%	32,5%	0%	0%
e.	Spreadsheets	58,75%	20%	6,25%	1,25%
f.	Database	48,75%	23,75%	10%	1,25%
g.	Internet – Communication and Documentation	53,75%	27,5%	1,25%	0%



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Which topics you think you would like to be addressed in the future training sessions?

Selected topics (written in italics) - *Database deepening; Presentation of educational software and ways of working with them; Mechatronics; AutoCAD 2D and 3D; Multimedia Applications; AEL; Using educational software in AEL; Paint Applications; CATIA; Lessons solved Interactive; Inventor; LabVIEW; FluidSIM; The Computer and PLC set in schedule of mechatronics, Class XII and XIII; Corel Draw* - were introduced in the classes of practical applications and thus developed for the following

series of students. Applications of AutoCAD, CATIA Module were included in advanced ICT and mechatronics information (courses and applications) were included in Module 1, Specialized Disciplines. Unfortunately, curriculum imposed by the ministry does not allow us to develop Module 3 ICT and other applications then in other educational programs accredited by CNFP.

How far the methodical approach of topics/courses covered in Module III was effective against objectives?

	<i>Specified Aspect</i>	<i>Very much</i>	<i>Much</i>	<i>Satisfactory</i>	<i>Insufficient</i>
a.	Accessibility of specialized language and terminology	65%	18,75%	1,25%	0%
b.	Used Methodology	58,75%	23,75%	1,25%	0%
c.	Interactive nature of the activities	58,75%	25%	1,25%	0%
d.	Access to ongoing support	65%	16,25%	1,25%	0%

What suggestions and recommendations you have for improving the used methodology in courses and applications made?

- Transmission of information at a pace more alert for more practical applications in the second part of the lesson;
- Existence of several materials listed/printed for exercises (practical work);

- More time for individual applications;
- Sessions dedicated to a single type of application, to deepen;
- Course support less dense;
- A larger course for not being necessary to exercise and practice outside the topics ;

How do you assess the final evaluation of educational activities within the Module III in terms of:

	<i>Specified Aspect</i>	<i>Very much</i>	<i>Much</i>	<i>Satisfactory</i>	<i>Insufficient</i>
a.	Evaluation tools used	56,25%	25%	1,25%	0%
b.	Relevance of the documents requested by portfolio	47,5%	33,75%	2,5%	0%
c.	Assessment efficiency for future teaching activities	47,5%	31,25%	2,5%	0%

What suggestions and recommendations you have to improve methods and final evaluation tools used in Module III?

- Division on multiple preparing levels of the students;
- To work in smaller groups;

- A greater number of classes for Excel and Database Modules;
- Less topics and applications;

What recommendations and general feedback you addressed to the trainers team?

General appreciation:

- Professionalism;
- Patience;
- Flexibility;
- Excellent team, very well prepared.

Recommendations:

- One trainer to work with fewer students;
- Course has less hours;
- Portfoliu with fewer topics;

Reuse of this module in the same program or transferring it into other programs can increase the effectiveness of educational programs offered by DPPD-SSU.

Example: ICT Module has a mandatory status when it is part of a program from category 1, «every 5 years» and non-binding, when the supplier presents it as a thematic program, from category 2.

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