



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Panevėžio kolegijos
INFORMACINIŲ SISTEMŲ PROGRAMOS
(653E15003)
VERTINIMO IŠVADOS

EVALUATION REPORT OF *INFORMATION SYSTEMS*
(653E15003)
STUDY PROGRAMME
AT Panevėžys College

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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Informacinės sistemos</i>
Valstybinis kodas	653E15003
Studijų sritis	Technologijos mokslai
Studijų kryptis	Informatikos inžinerija
Studijų programos rūšis	Koleginės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (3), išstėtinė (4)
Studijų programos apimtis kreditais	180
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informacinių sistemų inžinerijos profesinis bakalauras
Studijų programos įregistravimo data	2004-05-21

INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	<i>Information Systems</i>
State code	653E15003
Study area	Technological Sciences
Study field	Informatics Engineering
Kind of the study programme	College studies
Level of studies	First
Study mode (length in years)	Full-time (3), part-time (4)
Scope of the study programme in credits	180
Degree and (or) professional qualifications awarded	Professional Bachelor in Engineering of Information Systems
Date of registration of the study programme	21 of May, 2004

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The Centre for Quality Assessment in Higher Education

CONTENTS

I. INTRODUCTION.....	4
II. PROGRAMME ANALYSIS	5
1. Programme aims and learning outcomes.....	5
2. Curriculum design	6
3. Staff	7
4. Facilities and learning resources	8
5. Study process and student assessment.....	8
6. Programme management	10
III. RECOMMENDATIONS	11
IV. SUMMARY	12
V. GENERAL ASSESSMENT	13

I. INTRODUCTION

The Lithuanian Centre for Quality Assessment in Higher Education has invited four independent experts and one representative of students (hereinafter called Expert Team) from Estonia, Latvia, and Lithuania, to review and assess the higher education college type study (professional bachelor) programme *Information Systems* (state code 653E15003, Informatics engineering study field) (hereinafter called IS) at Panevėžys College (further College).

The study programme (further SP), both in full- and part-time mode, is conducted by the Department of Information Systems and Communications (further Department of ISC) in the Faculty of Business and Technology (further Faculty). Implementing the SP is supported also by other units and departments.

Assessment of SP was made in that order: first stage – analysis of information placed in SP self-assessment report; second stage – visit to College.

After analysis of self-assessment report (further SAR) Expert Team have noticed that SAR is constructed according to the requirements.

The structure of College, being confirmed by College Academic Board's decision No.VK-1 of September 16, 2009 corresponds with the core functioning, management and development requirements for the higher educational institution.

External assessment of the IS SP never has been done before.

The self-analysis of SP has been fulfilled by team in conformity with College director's order No. VI-118 of January 20, 2012. The line up, responsibilities of the team members and schedule of team activities are presented in self assessment report. However, self-evaluation team presented in SAR includes only members of administrative and teaching staff. Students and other stakeholders were not included into the team. In the time of visit College representatives have explained that students and employers representatives are presented in subgroups of self-evaluation team, but no documented evidences were presented.

The Expert Team visited the Faculty on September 19, 2012.

First, the Expert Team met the administrative staff of the Faculty represented by :

Egidijus Žukauskas – Director of Panevėžys College,
Birutė Dalmantienė – Deputy Director of Academic Affairs,
Gediminas Sargūnas - Deputy Director of Infrastructure,
Ričardas Kliminskas – Quality Auditor,
Elvyra Juzėnienė – Head of Study Quality Department,
Kęstutis Lukoševičius – Dean of Business and Technology Faculty.

Overview of College and its strategy for 2011-2020 years was presented in the time of meeting.

Next meeting with members of the Self-Evaluation Team (5 persons) was conducted. At this meeting, the Expert Team was given clear and exhaustive answers to the questions concerning less uncovered issues in the SAR.

After that, a meeting with 9 members of teaching staff took place. Most of the teachers were speaking English and have expressed their opinions actively.

The Expert Team conducted also interviews with some students. The group consisted of 5 full-time students (among them: 4 - 2nd-year students, 1 – 3rd-year students). Unfortunately, there were no 1-st year students in the meeting. The Expert Team was familiarized with students' attitude towards the programme. The students expressed positive opinions about the study programme, their social life (students like learning environment, teachers' attitude to students, programming subjects, subjects related to controllers et.al). Students also have added some remarks about issues which could be improved (low scholarships; microcontroller equipment could be more effectively used for practical exercises; Turbo Pascal programming language is obsolete, C++ must be instead of Pascal). The students have demonstrated good English knowledge.

The Expert Team had possibility to observe various support services (classrooms, laboratories, computer services, library) as well as to familiarize with students' final works.

Finally the Expert Team met 9 graduates and potential future employers of the students. They expressed positive opinions about the SP.

At the conclusion of the visit, the Expert Team conducted a meeting with staff of the Faculty and introduced general remarks of the visit and highlighted some strengths and weaknesses of the programme under review.

The findings of the Expert Team are reflected in the following. The SAR submitted by Faculty, the observations made at the time of the visit, and the supplementary material received during the visit form the basis of these assessments.

II. PROGRAMME ANALYSIS

1. Programme aims and learning outcomes

The programme aims and learning outcomes are defined in the core aim of IS SP (SAR, p.6), in the table which connects programme aims and learning outcomes (LO) (SAR, Appendix 6) and in the description of each subject (SAR, Appendix 1).

After reading the SAR the members of Expert Team have noticed that SP LO's cover very wide range of qualification areas:

- Creating and updating computer software;
- Creating and updating computer networks;
- Creating and updating computer electronic systems;
- Creating and updating computer networks;
- Creating and updating controllers;

Some of these LO's maybe could more apply to another study programmes realised in College:

LO - „Creating and updating computer networks”, to study programme *Administration of Computer networks*;

LO - „Creating and updating controllers”, to study programme *Electrical and Automatic Equipment*.

But in the time of visit the discussions about this issue with students, alumni and employers had place and all stakeholders expressed the opinion that wide range of qualification areas opens wider possibilities for graduates for the search of job places and are relevant for Panevėžys region.

Though in SAR is said that information about the programme's implementation and the qualification degree is accessible (in the AIKOS database; in the College webpage: <http://panko.lt/lt/priemimas/priemimas-2012.html>; department website; in yearly College publications *Studijos*; other publications: *What to become? Where to study?* etc. in special advertising-information flyers; study exhibitions; fairs; during open doors; career days; in practicals for schoolchildren and visits to city and regional schools and gymnasiums) public accessibility of SP aims and LO's is not sufficient. College webpage is available only in Lithuanian version. And even in this version it is possible to find very short description of SP aims and LO's (www.panko.lt/lt/kolegija/studiju-programos/63-technologijos-mokslai/70-informacines-sistemas.html). There is absent wide description (for example like in SAR, Appendix 6). In the time of visit students expressed opinion that information only in Lithuanian it's enough for them, but the Expert Team recommends to upgrade College website creating the English version and placing SP aims and learning outcomes of SP on it.

SP aims and LO's are based on professional requirements, public needs and the needs of labour market. This conclusion is based on results of association Infobalt major IS sector survey; on data of Statistic Department; on results of College ISC department major Panevezys regional enterprises survey; on data about placement of IS SP graduates (SAR, p.6) and on the opinion obtained in the time of visit from stakeholders.

The programme aims and LO's are consistent with the type and level of studies and the level of qualifications offered.

The name of the programme, its learning outcomes, content and the qualifications offered, generally, are compatible with each other. When reading SAR (Appendix 6), some LO's (for ex. „to design, create and update controllers”) and some study subjects (for ex. Controllers, Professional practice of Mechatronics; Maintenance module of digital control systems) have seemed more apply to the study field of Electrical and Electronics Engineering (Automation Engineering). However in the time of visit the discussions about this issue with students, alumni and employers had place and all stakeholders expressed the opinion that these LO's and these subjects serve for the wider range of qualification areas and open wider possibilities for graduates for the search of job places and are relevant for Panevėžys region.

2. Curriculum design

The curriculum design, generally, meets legal requirements set by Lithuanian authorities. However, there are some small mistakes: the scope of module of Physics – 9 ECTS (requirement ≥ 10 ECTS); full-time study plan presents subject Computer graphics(3 ECTS) when part-time study plan has no subject with such name – subject Computer Aided Design (also 3 ECTS) it is placed instead of Computer Graphics.

Most of study subjects and modules are spread evenly, their themes are not repetitive. Subject Professional practice of Mechatronics is studied in 3-rd semester, but before there are no any theoretical subjects where basics of mechatronics are presented. So, sequence of subjects:

Practice of Mechatronics (3-rd semester); Controllers (4-th semester; Microprocessor controlling systems (3 semester), could be revised.

In the time of visit this issue was discussed with the self-assessment group, and group members agreed that some changes of study plan could be done to change current situation.

In the time of visit alumni and employers expressed opinion that they would like to see more modern programming languages included in the SP (e.g. C++).

Two optional specialization modules (*Software Maintenance Module* and *Maintenance Module of Digital Control Systems*) are foreseen in study plan. However, two last years all students have selected Software Maintenance Module, so it seems reasonable in the future to update another specialization module (Maintenance Module of Digital Control Systems) or change it to more attractive to students.

The content of the subjects and modules is consistent with the type and level of the studies. The content and methods of most of the subjects/modules are appropriate for the achievement of intended learning outcomes. Though in subjects' descriptions (SAR, Appendix 1) the lists of laboratory and practical works was not presented-and because of that in some subjects' cases was hard to evaluate this issue, but all questions on this issue was positively answered in the time of visit.

The scope of the SP is sufficient to ensure learning outcomes.

The content of the programme (as College level SP) enough reflects the latest achievements in science and technologies. It is being updated constantly, e.g., recently a new module on data mining was included.

3. Staff

The IS SP is provided by the staff meeting legal requirements: more than 10% of study area subjects are taught by teaching staff having doctoral degree; all teachers working in IS SP have attained master or equal to master degree; 68%(>50%) of SP teachers have more than 3 year experience of practical work according the subject taught.

The qualifications of the teaching staff are adequate to ensure learning outcomes.

The number of the teaching staff is adequate to ensure learning outcomes.

Teaching staff turnover is not significant: in 5 recent years the turnover of the teachers working in the IS SP was comparatively insignificant. In 2011 the head of the Department lecturer J. Paulaviciene returned after maternity and parental leave; 3 new practical training teachers were invited; 1 teacher left for retirement. So, the teaching staff is able to ensure an adequate provision of the programme.

College creates conditions for the professional development of the teaching staff necessary for the provision of the programme: teachers plan their professional development in the departments; participation in the international projects and exchange programmes are planned together with International relations and Marketing unit. In SAR it is said that in June 2012 the research *Personnel Qualification development needs* was carried out and special qualification development measures are foreseen. In the time of visit Expert Team was informed that this

research is still going on and will be finished in the end of October, so final results of this research will occur in November.

The teaching staff of the programme is involved in research directly related to the SP: teachers write articles; prepare and deliver presentations at conferences; run courses, seminars; provide consultations to social partners.

4. Facilities and learning resources

The premises for studies are adequate both in their size and quality.

The teaching and learning equipment (laboratory and computer equipment, consumables) are adequate both in size and quality. New auditoriums, laboratories with the newest modern hardware and software necessary for the *IS study programme* execution are provided with the help of EU structural funds.

The College has adequate arrangements for students' practice: *Practice of Mechatronics* is carried out in *The Mechatronics Centre of Panevezys*; *IS designing practice* in the laboratory of *Panevezys Centre of Practical Training*; *Professional and Final practice* in the enterprises that use hardware and software, computer networks, database management systems, software in which new information systems are used or created (cooperation contracts are concluded with 25 enterprises of the region).

Teaching materials (textbooks, books, periodical publications, databases) are adequate and accessible: the library is supplemented with 83000 copies and more than 53000 titles of the publication fund, including 80000 copies/titles books of serial publications and more than 500 physical units of electronic documents; presently the library subscribes more than 60 physical units, over 52 key periodicals in Lithuanian and other languages; 1718 copies and 426 titles publications are intended for the field of computer engineering study; students and teachers are provided with the opportunity of using the DBs of scientific information (*EBSCO PUBLISHING*, *Taylor & Francis*, *Emerald Management eJournals Collection* DBs); the majority methodological aids are found in virtual teaching environment *Moodle*; VGTU (Vilnius Gediminas Technical University) and MRU (Mykolas Romeris University) e-book sets are subscribed. The library work is fully computerised.

Though there are many Russian books in the subjects' literature lists and students cannot read Russian, teachers explained that they are using Russian books when they preparing teaching and learning materials. Anyway, more books in English could be included in the descriptions of subjects.

5. Study process and student assessment

The admission requirements are well-founded: student admission is planned with consideration of tendencies of labour market, results of graduates placement and prognosis of graduates demand; from 2009 Panevezys College participates in joint admission to Lithuanian higher education institutions and is governed by the general provisions of the admission; admission regulations define study programmes for student admission, principles of formation of scores, composition of a competition score, formula of calculating a competition score, admission procedures; for applicants to *IS* studies, a competition score consists of assessment of examinations in mathematics, information technologies, the Lithuanian language and annual score in the foreign language multiplied by leverage coefficients; in case an applicant chose not

to take any of the examinations, although had a chance of selecting it, he is given a 'zero' score. Such an applicant is entitled to participate in the competition.

The organisation of the study process ensures an adequate provision of the programme and the achievement of the learning outcomes.

Students are encouraged to participate in applied research activities: since 2010 Student scientific society of the College has started its active development, every student is encouraged to become involved in applied research; students are regularly provided with the academic information about the opportunities to write reports, to participate in the conferences, etc; *Grant distribution regulations* entitle to grants for active participating in the scientific activity; in 2007-2012 the IS study programme students delivered 5 reports at the students' scientific-practical conferences which have been conducted at the College.

Students have opportunities to participate in student mobility programmes. College has Erasmus agreements with higher institutions of Denmark, Poland, Great Britain, Spain, Turkey. In SAR, p.24 was presented that in 2007-2011 IS study programme students did not participate in the international student exchange programme and was no arriving students from other countries to study in the IS Study programme as well. In the time of visit the staff informed Expert Team that there were no students willing to go abroad in the frame of Erasmus programme because in that period students and their families were in difficult financial situation (because of economic crisis in Lithuania). Students also expressed opinion that the financial situation was the main problem. But in the same time students have added that marketing of Erasmus exchange possibilities was not on very high level. The situation seems going better now: from September 2012 4 students of IS SP started to study according Erasmus exchange programme in *Denmark (VIA University College)* and 1 student started practical training in *Italy (Euroform RF enterprise)*.

College, generally, ensures an adequate level of academic and social support. However, it would be reasonable to foresee the means for supporting students which are intending to participate in Erasmus exchange programme.

The assessment system of students' performance is clear, adequate and publicly available: the criteria for the student achievement assessment are presented to the students during the first lectures of each semester; the teacher of every subject is responsible for familiarizing the students with procedures and time terms of the student achievement assessment; students are continuously familiarized with their achievements; comments on interim results are presented verbally together with the analysis of the major mistakes and the emphasis on the ways of student improvement; in accordance with Studies common regulations the results of examinations should be announced no later than one working day following the examination, a student who disagrees with the assessment of the subject of the semester or final work (examination) is entitled to hand in an appeal in compliance with the *rules of appeals of Panevezys College* adopted by the academic council sitting, Protocol No. V4-4 dated 21-01-2010.

Professional activities of the majority of graduates meet the programme providers' expectations: graduate placement according to qualifications they have obtained was 67% - in 2008; and 73% - in 2010. The placement of students of consistent studies is under continual monitoring: during the year of graduation, 6 months after graduation, 12 months after graduation.

6. Programme management

The responsibilities for decisions and monitoring of the implementation of the programme are clearly allocated: the faculty management is responsible for the quality of programme administration, whereas the department and programme committee in the study programme level - for ensuring of the development and optimization of the programme and study outcomes.

Corrections in the programme can be initiated by every member of the committee as well as by all the teachers of the department taking into consideration propositions of social partners and students. E. g., rational and well-grounded propositions of students are taken into consideration while designing the schedules and sequence of examinations or including new elective subjects into the plan of the study programme. The propositions are generalized, discussed at the sittings of the department, in some cases, at the sittings of the dean's office and academic council, furthermore, they are coordinated with the heads of other sub-units. The study programme committee consists of 7 persons. Lecturer Henrikas Sinickas is the head of the *IS* study programme committee.

Information and data on the implementation of the programme are regularly collected and analysed: every year the *IS SP* quality is assessed measuring various performance indicators of *SP* and the results of monitoring are analysed in Department of *ISC* and programme committee.

The outcomes of internal and external evaluations of the programme are used for the improvement of the programme: evaluation results of *IS* study programme assist in eliminating weaknesses and developing strengths in respective areas, in providing improvement measures and means, in preparing the self-analysis of the programme and annual reports of the activities. Throughout the process of quality evaluation attention of all respective persons (students, teachers, stakeholders) is focussed on urgent questions and arising problems and various aspects in need of improvement. Solutions are found through design of action plans of quality improvement and the follow-up of their implementation.

The evaluation and improvement processes involve stakeholders. Social partners participate in final thesis defense, write reviews, give oral comments about need programme changes. But it could be reasonable to foresee additional regular meetings with employers for study programme evaluation and updating.

The internal quality assurance measures are effective and efficient.

III. RECOMMENDATIONS

1. Update College website creating English version and placing information about SP aims and LO's there;
2. Correct the scope of module of Physics – 9 ECTS (requirement ≥ 10 ECTS);
3. Correct part-time study plan changing the name of subject *Computer Aided Design* to *Computer Graphics*;
4. Correct the sequence of some subjects (Practice of Mechatronics, Controllers, Microprocessor controlling systems) in study plan;
5. Update second specialization module (Maintenance of Digital Control Systems), making it more attractive for students or change it to more attractive one;
6. Use more books in English language instead of books in Russian, because students don't know Russian language at all;
7. Plan and implement the means for strengthening advertising process of Erasmus programme, to make exchange students number higher;
8. Foresee and implement the means for supporting students which are intending to participate in Erasmus exchange programme.
9. Foresee and implement means for attraction of employers to regular additional meetings for SP evaluation and improvement.

IV. SUMMARY

The study programme *Information systems (state code – 653EI5003)* of Panevėžys College is highly demanded in Panevėžys region and supported by study programme stakeholders.

Main positive quality aspects of programme evaluation areas:

- Study programme aims and learning outcomes are based on professional requirements, public needs and the needs of labour market.
- Study programme aims, learning outcomes and the content of subjects are consistent with the type and level of studies and the level of qualifications offered.
- The scope of the study programme is sufficient to ensure learning outcomes.
- The study programme is provided by the staff meeting legal requirements and the qualifications of the teaching staff are adequate to ensure learning outcomes.
- The premises and the teaching and learning equipment (laboratory and computer equipment, consumables) for studies are adequate both in their size and quality.
- The admission requirements are well-founded.
- The organisation of the study process ensures an adequate provision of the programme and the achievement of the learning outcomes.
- The assessment system of students' performance is clear, adequate and publicly available.
- The responsibilities for decisions and monitoring of the implementation of the programme are clearly allocated.
- The internal quality assurance measures are effective and efficient.

Quality aspects of the study programme which could be improved:

- Accessibility of study programme aims and learning outcomes.
- Study plan needs correction.
- Accessibility of teaching materials.
- Students' participation in student mobility programmes.

V. GENERAL ASSESSMENT

The study programme *Information Systems* (state code – 653E15003) at Panevėžys College is given **positive** evaluation.

Study programme assessment in points by fields of assessment.

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Staff	4
4.	Material resources	3
5.	Study process and assessment (student admission, study process student support, achievement assessment)	3
6.	Programme management (programme administration, internal quality assurance)	3
	Total:	19

*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;

2 (satisfactory) - meets the established minimum requirements, needs improvement;

3 (good) - the field develops systematically, has distinctive features;

4 (very good) - the field is exceptionally good.

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