SKVC

STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Klaipėdos valstybinės kolegijos

INFORMATIKOS STUDIJŲ PROGRAMOS (653I10002)

VERTINIMO IŠVADOS

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EVALUATION REPORT OF *INFORMATICS* (653I10002) STUDY PROGRAMME

at Klaipėda State College

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Išvados parengtos anglų kalba
Report language - English

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Studijų programos pavadinimas	*Informatika*
Valstybiniai kodai	653I10002
Studijų sritis	Fiziniai mokslai
Studijų kryptis	Informatika
Studijų programos rūšis	Koleginės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (3), ištęstinė (4)
Studijų programos apimtis kreditais	180
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Informatikos profesinis bakalauras
Studijų programos įregistravimo data	2004-07-05

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INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	*Informatics*
State code	653I10002
Study area	Physical Sciences
Study field	Informatics
Kind of the study programme	College Studies
Study Cycle	First
Study mode (length in years)	Full-time (3), part-time (4)
Volume of the study programme in credits	180
Degree and (or) professional qualifications awarded	Professional Bachelor of Informatics
Date of registration of the study programme	5 July 2004

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I. INTRODUCTION

The Lithuanian Centre for Quality Assessment in Higher Education (SKVC) has invited five independent experts and one representative of students (hereinafter called Expert Team) from Austria, Finland, Lithuania and Norway to review and assess the Study Program in the Study Field of Informatics.

The Informatics study programme under evaluation (INF for short) in Klaipėda State college belongs to Higher College Studies and provides two modes by the duration of years Full time (3 Years) and Part time (4 Years). The study program is run by the Faculty of Technologies (TF for short) of the Klaipeda State College (KSC) and is supervised by the Department of Information Technology of KSC.

Graduates of INF are awarded a Professional Bachelor´s Degree in Informatics and are supposed to have skills and knowledge within the area of programming (i.e. software development) in particular.

The Expert Team visited the Department on February 25th 2013. The meeting was organized as it is listed below.

Meeting with Administrative staff

Meeting with staff responsible for preparation of self-evaluation reports
Meeting with teaching staff
Meeting with students
Inspecting various support services (studios, teaching spaces, workshops, library, computer services, etc.)
Familiarization with students' final works, examination material
Meeting with graduates and employers, social partners
Discussions, observation of the visit (close-door experts' group meeting)
Presentation of preliminary findings and general remarks of the visit to representatives of Klaipeda College.

Before the visits the expert team had a possibility to analyze self evaluation report prepared by KSC and discuss all necessary questions. The Expert Team had possibility to visit various study support services (class rooms, computer services, library) and could put detailed questions to staff members responsible to these ressources, if necessary. The Expert Team also familiarizde with students' final works, which had been made available.

The Expert Team conducted also interviews with some students and was familiarized with students' attitude towards the study programme. The meeting was carried out in an active and constructive atmosphere. The students expressed mostly positive as well as critical opinions about the programme.

Finally, the Expert Team met graduates and potential future employers/social partners of the students as well. They also expressed positive opinions about the study programme. The purpose of the close-door meetings during the visiting day was, to identify major impressions immediately, so that the representatives of KSC could have a first but very general feedback listing highlights but some weaknesses of the program as well.

In the following sections, the findings of the Expert Team are outlined. The Self-assessment report submitted by the Faculty, the observations made at the time of the visit, and the supplementary material received during the visit are, of course, an essential basis of these assessments.

II. PROGRAMME ANALYSIS

1. Programme aims and learning outcomes

The need for this programme comes from the analysis of the labour market demand for IT professionals in Western Lithuania. In expert team opinion, the programme under assessment is aimed to cover regional demands in Klaipeda region on IT specialist.

Objectives and learning outcomes of Information Systems Engineering study programme are published in the College website www.klvtk.lt (http://www.klvtk.lt/index.php/lt/studies-in-foreign-languages/faculty-of-technologies-menu). As it is listed there, the purpose of the study programme Informatics is "to train Professional Bachelors of IT, who are able to analyze, create, review and rewrite computer programs individually or in teams to correct errors in Java, PHP and other languages; to develop and mange databases; to perform computer hardware and software maintenance, to administer local computer networks".

Unfortunately, the list and (partially) the order of subjects displayed at the website do not correspond fully with those listed in the self evaluation report. Additionally nice translations flaws can be encountered in the mentioned page for the programme, e.g. Floppy(?) Creation of Program Systems". But this is rather an organizational aspect and was therefore not essential for the peer group's judgments of aims and learning outcomes.

In general, programme aims and learning outcomes are well defined and they are publicly accessible. The learning outcomes are consistent with type and level of studies carried out in KSC. In the opinion of experts, learning outcomes and programme aims are clear, well defined and coherent.

2. Curriculum design

Some study subjects do not relate with the primary learning outcomes of the study programme. The list of subjects within "General Education Subjects" needs a redesign. If however, because of some reason, these subjects have to be provided, then their content should be adjusted closer to the needs of a programme designed for studying Computer Science/Informatics. As a typical example we like to mention: the lecture on "Environmental and Human Safety" does not cover the difference between "safety" and "security", strictly following the title of the subject, and spends time on "Weapons of mass destruction" instead of discussing e.g. risk issues of a compromised IT-Systems, which touch both, security and safety.

Information Security is offered as a special subject during the last (6th) semester and could go into the subject deeper if a general introduction were given earlier.

With respect to more advanced topics (3rd semester) a further example is the compulsory subject "Numerical Methods" which covers classical topics of Numerical Analysis as there are "Solving nonlinear equations" and "Solving differential equations". These fields are relevant for programmes in Applied Mathematics, but of minor relevance for the aimed study outcomes. If the list of subjects (Table 8 in the self assessment report is correct and consistent, than it is also surprise that "Modern Databases" is classified as noncompulsory (i.e.: optional, alternative) taking into account, that "to develop and manage databases" is listed as an study aim explicitly. Please note also, that the attribute "modern" (this is different to "advanced") may imply that the compulsory subject "Databases" is outdated. Similar arguments hold for "Agile Programming", a discipline of advanced software development-design processes. In the list of subjects (Table 8: curriculum of the full-time INF study programme) this theme was listed only, but without credits and without closer specification of teaching hours.

It is worth mentioning that some recommendations of a former assessment (Year 2008) concerning relevant subjects as e.g. security and basics in cryptography have been added to the curriculum meanwhile (in the list of contents (Annex1) there is a translation flaw: safety versus security). Because security issues are of increasing importance within computer networks, this subject should be expanded, if one considers that "administering local computer networks" belongs to the listed programme aims as well. Also using "trusted certificates" becomes more common and important, so that an extension of this broad field is justified and a shift of the basic part into the lecture on "Safety and alike" ("General Education Subjects") would be welcome and would provide more time for real security concerns.

Forms and teaching methods used in classes during the lessons are good. In general the assessed programme has reached a good and acceptable standard and additionally shows good promise for gaining top quality on the longer run. The offered curriculum has improved significantly compared to the list of subjects available in 2008.

3. Staff

According the self assessment report the INF study programme is implemented by 21 teachers, the subjects of the study fields are provided by 12 teachers. As the self assessment report commits frankly, the general Requirements that 10% of the subjects should be delivered by persons with at least PhD level are not met. In the current situation at least one more teacher should have PhD.

This is a major problem and the representatives of KSC must be advised to solve this problem. It was mentioned, that the situation would improve, because one member of the teaching staff was supposed to get the PhD Qualification by the end of 2012, but a delay occurred. Another staff member was admitted to a PhD study rather recently.

The peers group understands this unpleasant situation which comes close to a vicious circle: on the one hand side the aim of the study program is to educate more persons towards IT because of a lack of such persons in the area, and on the other hand there is a lack of skilled staff to meet this target.

The latter situation also provokes a heavy teaching load in particular for those persons who are part time teachers only and are employed elsewhere too. All these observations can be summarized as follows: there is a lack of permanent staff members with doctoral degrees in science and technology and consequently there is not enough time left for pushing forward international exchange activities. (Some of the few ones are to be classified as "internships" just for a couple of days somewhere else.) Tables 11 and 12 show the numbers and a careful reading reveals visits of colleges like "escola superior de enfermagem" (nursing school) or shows that only one person from a foreign country came under the Erasmus scheme in 2011 and none in 2012.

One could imagine that this kind of "absence from exchange programs" as it is shown by members of the teaching staff, influences the interest of students to take use of these international programs implicitly. It is fair enough to add, that the self-assessment team had identified this "unhappy" state and has added a clear list of improving aspects together with possible improvement actions.

Again this self-observation should be considered as a strong signal that the KSC is moving into the right directions. Expert team during discussions found that teaching staff is adequate to ensure learning outcomes. It is clear that administration is aware of the problems identified above and they have clear strategy to develop the quality of staff.

4. Facilities and learning resources

There are a good number of lecture rooms and computer classes for both implementing the study programme and performing individual assignments. Technical (safety) and hygiene conditions of the premises meet the prescribed requirements and norms. Working places and working conditions (in particular, opening hours) in libraries (reading rooms) for maintaining high-level studies are suitable. With respect to establish English more efficiently, the number of English textbooks in the library can be considered as poor. An (free) access to international e-book-services and digital libraries should be (re)considered as for time of visit it was absent.

The computer hardware and software are up-to-date and the latter, as we have been told, comprise legal versions only. KSC made a definitive and strong commitment towards using JAVA for both, as a programming vehicle and as a teaching base for object orientation in general. This defines a clear unique selling proposition (USP). It should be added, that there are (at least) two approaches common within the academic community: either teaching a variety of programming languages, from C (pure procedural) towards C++ , C# and JAVA etc, or to focus on just one representative, typically JAVA together with the free developing platform called Eclypse. The chosen approach is backed by the argument, that the software in use is free of charge, does not involve legal infringements and provides some independency from dominating companies.

In general, the available equipment is suitable and sufficient for studies. In particular the laboratory for mobile applications, opened in 2012 in cooperation with AppCamp UAB, deserves mentioning as a good example. However, efforts should be made to present more English literature in library.

5. *Study process and student assessment*

Admission to the programme is organized according to the legal acts and regulations, established by the Law on Higher Education and Research. According table 14 of the self-assessment report the number of applicants is growing. Together with the results of our interview with students and graduates of the programme there are good reasons to assume, that this increase is based partially on the general attractiveness of the programme.

An interesting and appealing but at the same time a bit vague aspect is stated under enumeration (109) opening the possibility for former (including former expelled) students to resume their study. Together with enumeration point (117) it should be clearly specified what the meaning of "expelled" really is apart from obvious cases. The phrasing "more than three academic failures" might open doubtful interpretations compared to the fact, that study success is measured in terms of credits (according the ECT System).

In enumeration point (116) it is listed, that approx. 37 % of the admitted students have been expelled during the period 2009-2012. At the same time, and that it is interesting, the percentage of expelled full time students is approx. 27%, whereas the portion for part-time students is approx 10% (of the total number). The conclusion, whether this is a matter of different motivations is left to the reader. In so far the number of resigning students is high but lies within a tolerable bandwidth compared to other European teaching institutions.

The general observation is: the organisation of the study process is reasonable and properly carried out. Students are encouraged to participate in scientific conferences, in various

technical competitions and to present their ideas there. The students of the Informatics study programme are actively engaged in applied research. The TF of the KSC has an active club of Mechatronics, participation in which enables the students to enhance knowledge and practical skills in specialised subjects while carrying out applied research. TF students in Mechatronics club are responsible for programming the robots.

One particular shadow remains and should be given special attention for the immediate future: this is the students' ("non"-) participation in mobility programs. According to data provided in paragraphs (130) and (132), within four years (2009-2012) Erasmus scholarships received only 8 KSC students. In comparison with the total number of students in this period, we are realizing that less than 4% of the students have participated in mobility programs. This is rather surprising, since, according to the opinion of the KSC, students are well informed about the opportunities to participate in mobility programs at the beginning of each semester (see 129).

6. Programme management

Responsibilities for the supervision of the study and quality assurance are embedded into clear structures, which are described within chapter 6 of the self-assessment report. The KSC has established a Committee on Quality in Higher education and Figure 2 shows the overall structure, how the Academic Council the named committee, the department and the (INF-) committee for study programs in particular are supposed to collaborate. Explicitly it is stated, that groups, students and social partners are members of this committee.

Team of experts also found out that recommendations from previous assessment were taken into account. The most obvious examples are reflected in curriculum design and also a lot of efforts were spent in modernizing facilities of KSC which also includes facilities used in INF study programme.

Naturally, it was not possible for the peers-group, to identify, how often and to what extent these groups contribute to the overall study and content design. In particular, following the self assessment report and taking comments into account made by interviewed social partners, we mention: it is unclear whether the various stakeholders have more than the possibility to make "nice proposals". It seems that the final decision is made by the end of a long administrative chain, starting at the Committee for the Study Programme, moving to the head of this committee, moving to the Department and the Committee on Quality in Higher education and then eventually to the Academic Council. On this way proposals made by the "customers" (i.e.: students, employers) easily can be sacrificed to individual interests of staff etc. At least, this is thinkable and the decision chain must be improved. A general example – well known in any academic environment - of such a clash of interest is "updating the content of a lecture due to

changing market needs and demands of stakeholders" versus "loss of efforts already done previously".

The team of experts found it hard to identify an actual contact with stakeholders as it happens in rather informal way. Taking, however, the overall outcome into account, there is good reasons for assuming, that this cooperation is well established, effective.

III. RECOMMENDATIONS

1. The Curriculum shows several inconsistencies and (partially) needs to be more adjusted to informatics demands, in particular as the block "General Education Subjects" is concerned.

2. The Teaching Staff is young in average, but the number of teaching staff members with doctoral degree must be increased.

3. More elective subjects in curriculum is needed;

4. More English books in the library are needed and general free access to digital libraries (ACM, IEEE) should be organized.

5. Introduce software development process into curriculum (Agile Software Development seems not to be compulsory)

6. The information of students about the availability of free subjects choice should be expanded and performed more extensively.

IV. SUMMARY

The college study programme of Informatics (INF) is implemented by the Faculty of Technologies of the Klaipeda State College (KSC) and is supervised by the Department of Information Technology there.

The purpose of this study programme Informatics is "to train Professional Bachelors of IT, who are able to analyze, create, review and rewrite computer programs individually or in teams, to develop and mange databases; to perform computer hardware and software maintenance, to administer local computer networks". The software tools being used have a heavy emphasis of JAVA programming language now, which is adequate and modern. There two variants of the study offered, one for full time students and one for part time students. For the latter group the time schedule is adopted accordingly, giving them a fair possibility to work in parallel.

The program is modern and proposed improvements can be introduced without greater problems. Facilities and learning resources are of a good level and constant improvement is obvious. Students are very pleased with this study programme. Students from subsequent courses can identify the changes made in study programme which also shows that programme management is of a good level. Although being aware of gaps between reality and target state it is clear, that more permanent staff members with doctoral degree are needed.

The opportunities for students' participation in student mobility programmes should be expanded in order to improve the exchange rate and use of the ERASMUS program. The same is true for staff members. Other details are listed under "recommendations" above.

V. GENERAL ASSESSMENT

The Study Programme of INFORMATICS (653I10002) at Klaipėda State College
is given a **positive** evaluation.

Study programme assessment in points by fields of assessment.

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	4
2.	Curriculum design	3
3.	Staff	3
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.

Studijų kokybės vertinimo centras

APIBENDRINAMASIS ĮVERTINIMAS

Klaipėdos valstybinės kolegijos studijų programa *Informatika* (valstybiniai kodai – 653I10002, 65309P107) vertinama teigiamai.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	4
2.	Programos sandara	3
3.	Personalas	3
4.	Materialieji ištekliai	3
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	3
	Iš viso:	**19**

* 1 - Nepatenkinamai (yra esminių trūkumų, kuriuos būtina pašalinti)

2 - Patenkinamai (tenkina minimalius reikalavimus, reikia tobulinti)

3 - Gerai (sistemiškai plėtojama sritis, turi savitų bruožų)

4 - Labai gerai (sritis yra išskirtinė)

IV. SANTRAUKA

Koleginių studijų informatikos programą (INF) vykdo Klaipėdos valstybinės kolegijos (KVK) Technologijų fakultetas, o prižiūri Informacinių technologijų katedra.

Ši studijų programa „Informatika" skirta rengti informatikos profesinius bakalaurus, gebančius individualiai arba komandoje analizuoti, kurti, peržiūrėti ir perrašyti kompiuterių programas, rengti ir tvarkyti duomenų bazes; prižiūrėti kompiuterių techninę ir programinę įrangą, kompiuterių vietinį tinklą. Šiuo metu naudojami programinės įrangos įrankiai ypač susiję su JAVA programavimo kalba, kuri yra tinkama ir šiuolaikiška. Siūlomi du studijų variantai: vienas - nuolatinių studijų studentams, o kitas – ištęstinių studijų studentams. Tvarkaraštis pastarajai grupei yra atitinkamai pritaikytas, suteikiantis jiems tinkamą galimybę tuo pačiu metu ir dirbti.

Studijų kokybės vertinimo centras

Programa yra šiuolaikiška, o siūlomi patobulinimai gali būti įgyvendinami be didesnių problemų. Materialiųjų išteklių lygis yra geras ir pastebimas nuolatinis atnaujinimas. Studentai yra labai patenkinti studijų programa. Vėlesnių kursų studentai gali nustatyti studijų programoje atliktus pakeitimus, kas taip pat rodo, kad programos vadybos lygis yra geras. Spragų tarp realybės ir deklaruojamo tikslo yra, tačiau akivaizdu, kad reikia daugiau nuolatinių darbuotojų, turinčių daktaro laipsnį.

Reikėtų išplėsti studentų dalyvavimo mobilumo programose galimybes siekiant pagerinti mainų rodiklį ir pasinaudoti ERASMUS programa. Tą patį galima pasakyti ir apie dėstytojus. Kita informacija išvardyti skyriuje „Rekomendacijos".

III. REKOMENDACIJOS

1. Programoje yra keletas neatitikimų, kuriuos (iš dalies) reikėtų ištaisyti ir pritaikyti prie informatikos poreikių, tai ypač aktualu blokui „Bendrojo lavinimo dalykai".

2. Dėstytojų kolektyvas apskritai yra jaunas, tačiau reikėtų didinti daktaro laipsnį turinčių dėstytojų skaičių.

3. Į programą reikėtų įtraukti daugiau pasirenkamųjų dalykų.

4. Bibliotekoje reikėtų padidinti knygų anglų kalba skaičių, taip pat turėtų būti sutvarkyta bendra laisva prieiga prie skaitmeninės bibliotekos (ACM, IEEE).

5. Į programą įtraukti programinės įrangos kūrimo procesą (panašu, kad judriosios programavimo metodikos (angl. Agile Software Development) nėra privalomos).

6. Studentus reikėtų informuoti apie laisvai pasirenkamų dalykų galimybę ir tai daryti žymiai plačiau.