

Estonian Higher Education Accreditation Centre

Joint Final Report

University of Tartu

Programs Assessed

80419 (8896212) Pharmacy (Bachelor and Master's integrated studies)
2707 (8505202) Pharmacy (Doctoral studies)
80361 (8896212) Pharmacy (Doctoral studies)

Visit Dates

October 21 – 26, 2008

Expert Team

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Part I

General Overview

THE ASSESSMENT OF PHARMACY

The Higher Education Accreditation Centre of Estonia has invited a team of experts to assess programs in pharmacy at the University of Tartu.

The expert team

Prof. Olavi Pelkonen, University of Oulu, Finland (Chair)

Prof. John Lilja, Abo Akademi University, Finland

Prof. Markku Koulu, University of Turku, Finland

Prof. Hartmut Porzig, University of Bern, Switzerland

The assessed programs:

UNIVERSITY OF TARTU

80419 (8896212) Pharmacy (Bachelor and Master's integrated studies)

2707 (8505202) Pharmacy (Doctoral studies)

80361 (8896212) Pharmacy (Doctoral studies)

The programme of the visit

The assessments took place during the period Oct 21 – 26, 2008. Tuesday evening Oct. 26, the Committee had a meeting with the managing director of the Accreditation Centre. An outline was given of the task of the Committee and the general situation of Estonian Higher Education.

From Wednesday 22 October up to the Thursday 23 Oct the Team visited the Tartu University. On Friday 24 October up to Saturday 25 October the Team wrote the evaluation report at the Accreditation Centre in Tallinn.

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The programme and working method

Prior to the beginning of the visits, the Team had a general discussion about the task as seen by the Committee, about the standards, formulated by the Accreditation Centre and the frame of reference for the assessment as seen by the Committee. At the same time the self - evaluation reports were discussed.

The programmes of the visit had in general the same format:

- meeting with the leaders/heads of the institutions
- discussion with the writers of the self-evaluation reports
- interviews with groups of students of the different programmes in small groups

- interview with academic staff of the different programmes in small groups
- interviews with important Committees
- on-site visits of facilities

The Team met, and personally interviewed, the Vice Rector for Academic Affairs of the University of Tartu, the Dean and the Vice Deans of the Faculty of Medicine, the Head of the Department of Pharmacy, and members of academic staff representing each subject group. The Team also interviewed groups of students from both Masters and Doctorate programmes. During its review, the Team visited the Department of Pharmacy at Tartu University, and the Biomedicum, which includes pre-clinical departments with responsibility for teaching components of the pharmacy programme. At the conclusion of the visit, the Team conducted an informal exit interview with the Head of Pharmacy. The Team asked for clarification on a number of issues, and presented its preliminary findings and opinions from the evaluation. The discussion was conducted in an open and constructive manner, and the Team thanked members of the University for their help and cooperation during the evaluation process.

A major part of each visit was to assess especially the organisation of the programmes, the way the curricula had been designed, the way the quality is being assured, the qualification of the staff, the research activities and all other points the programmes had in common. The Committee formally had to report on 3 programmes. However, because doctoral programmes of the Department of Pharmacy are rather small, formal regulations are instituted at the University level and the resources are distributed at the Faculty level, the performance of the doctoral programmes could be assessed only within the formal framework.

What follows are the findings of the Team (Part II), its conclusions (Part III), and its accreditation recommendations (Part IV). In Part II, the findings are relative to the “Requirements for accreditation of curricula of universities” (Approved by the regulation of the Government of the Republic of Estonia No 265 of 23 October 2003).

Part II

Findings

GENERAL FINDINGS AT THE UNIVERSITY OF TARTU

From the start of the actual visit to the University of Tartu, the Team was impressed by the great changes that had happened after the previous evaluation (**Joint Final Report of the Accreditation Expert Team, 2001**. Estonian Higher Education Accreditation Centre). Relocation of the Department of Pharmacy to the newly renovated building in 2005, adjacent to the Biomedicum departments and soon-to-be Chemistry institution, creates exciting opportunities for future developments in research and teaching. If these opportunities are fully exploited, and promising developments have already been undertaken (see below), the Team expects that the Department of Pharmacy will carry on its tasks to the full benefit of the University of Tartu and Estonian pharmaceutical sciences and practice.

Implementation of recommendations of the 2001 Expert Team

The Team finds it commendable that pharmacy programmes (i.e. the department of Pharmacy and the faculty of medicine) have responded efficiently and implemented or started to implement most of the general recommendations of the Joint Final Report of the Accreditation Expert Team, 2001. Especially the recommendation concerning

- the establishment of the programme committee for the pharmacy master programme,
- the involvement of the teaching staff in the Department of Pharmacy in the Programme Committees,
- the implementation of the European Credit Transfer System,
- the provision of more emphasis on the personal development needs of academic staff,
- balancing the chemistry bias to a more equal balance with medical and clinical subjects,
- increasing the proportion of group work and problem-based learning,
- encouraging pharmacy students to continue in the Ph.D. programme,
- modernising some subject areas such as pharmacognosy and pharmaceutical chemistry,
- involving external professional pharmacists in a regular review of the programme, to strengthen the student counseling and feed-back system.,
- developing a set of new, contemporary subjects (several new subjects of clinical pharmacy such as Primary Care Medicine, Laboratory Medicine, Clinical Microbiology, and Clinical Pharmacology, genetics, biotechnology, pharmaco-economy and pharmaco-epidemiology, physical pharmacy, pharmaceutical excipients, professional ethics, pharmaceutical terminology, introduction to pharmacy profession and history of pharmacy,
- strengthening the continuing education of the academic personnel,
- providing the students with additional study materials, in particular English language textbooks, scientific journals and a place for “quiet” study,

had been at least addressed and improvements achieved.

Although the full implementation of all the above recommendations has not yet been achieved and actually some have only recently been started, the work has clearly produced discernible changes in the pharmacy master and doctoral education and curricula.

The contents of the master curriculum

The head of the Department of Pharmacy conveyed very clearly and forcefully his determination to go from a chemistry-oriented to a medicine-oriented curriculum; he also described the philosophy behind the development of the curriculum. In general, the Team strongly supports this course of action. The change in medicine-related subjects has been rather considerable. Also, for example pharmaceutical technology-related course contents seem to have been changed towards medicine- and pharmacology-related topics.

The students interviewed expressed their satisfaction with changes of the integrated curriculum and with shifting the focus from chemistry to medicine-based curriculum contents. On the other hand, they also wished to convey views that in the face of multiple potential paths in their working life, they need variable skills and training to be prepared for future challenges. The Team noticed with satisfaction that students had clear and realistic views of the curriculum and they expressed their concerns in a very articulated way. Some of these concerns will be dealt with later in this report.

Elective subjects and courses constitute currently a relatively minor part of the Master curriculum. Although there may be administrative reasons, which prevent the increase of elective subjects and their incorporation into the curriculum, the Team recommends that the Department attempts to develop a more flexible and variable platform from which the students would be able to build their education.

The Team noticed that the current curriculum does not fully support a research-based orientation. It could be of benefit for the recruitment of younger staff already at the time they are conducting their master studies. It seems that the current state of research at the Department, relying on a relatively weak resource base, prevents more forceful actions in recruiting doctoral students. However, the future of the Department is dependent on its younger members and the Department should try to find ways to improve the situation. It would also be advisable to develop a research tract for interested master students by adding research-oriented electives.

The involvement of staff and students in the curriculum planning

Despite rather extensive discussions, the Team remained somewhat uncertain as to what extent the staff and the master and doctoral students actually participate in the curriculum planning. The programme council had been launched only recently and is not yet fully operative. The Team learned that the teaching staff has informal meetings when needed. In a relatively small department continuous informal contacts are often more efficient than formal meetings, but some formalization is usually advisable for the sake of the distribution of information and the transparency of decision process. For example, at the end of each term, a joint evaluation of study modules between teachers and students should be arranged, documented and distributed to the programme council.

Research and research-based education

The Head of the Department of Pharmacy and many members of the staff regarded research as the weakest area within the tasks of the Department of Pharmacy. Research and research-based higher education being inseparable, the Team is convinced that the Department needs to work towards the improvement of this situation. There are several obstacles to the improvement of the current situation, the most important ones being the lack of appropriate research equipment and sufficient resources for research. The Department has been trying to ameliorate the situation by collaborative arrangements with, e.g. Department of Technology and some Departments at the Faculty of Medicine, and also by international collaborations. These collaborative arrangements are certainly advisable, because it is not even a desirable state of affairs that all the research should be conducted within the department itself. However, collaboration needs mutually agreed input from both sides and the lack of resources in one side makes the collaboration unequal and hence, puts the Department of Pharmacy at a disadvantage.

The Faculty of Medicine houses altogether 6 master programmes. The Team considers that such a situation could potentially lead to a highly fruitful educational environment. However, the Team remained unsure about the extent of support from the Faculty of Medicine, given to the pharmacy master programme. The distribution of resources occurs at the Faculty of Medicine level, prioritizing the primary distribution of resources, which consequently affects the amount of support to the Department of Pharmacy. While the Team acknowledges that prioritization is the duty of the Faculty, the process should be completely transparent so that all the considerations and factors influencing the distribution of resources are dealt with in mutual understanding and consent.

Lack of equipment for the Master education cannot be tolerated any longer. It is the duty of the Faculty of Medicine to resolve this matter. The present situation has important detrimental consequences to teaching and research at the Department of Pharmacy, and also to the Faculty of Medicine, in terms of recruitment of doctoral students.

Teaching by other departments

A sizable proportion of the integrated curriculum is taught by other departments of the Faculty, the Department of Pharmacology being the most important one. Coordination, harmonization and development are taking place at the Faculty and programme council level and consequently the department is dependent on jointly negotiated decisions at these levels. While this state of affairs is natural and probably even beneficial, the Team recommends that the Department works towards closer integration of the most important components currently supplied by other departments. Thus e.g. pharmacology-related expertise should be available within the Department of Pharmacy. This should be taken into consideration for further staff development.

As already has been the case in social pharmacy subjects, the incorporation of outside teachers seems to be a recommendable way to recruit new skills and viewpoints to teaching, especially if the integration is done in a subject-oriented way.

Dropout rate and prolongation of studies

The Team is very concerned about the high dropout rate, which seems to have been remained at about 30 % despite of many new developments in the curriculum over the last years.

According to a student survey, the most important reason seems to be a difficult curriculum. In the discussions during the visit, several additional explanations were provided. Variable background in the fields of chemistry or other natural sciences skills of the entering students was offered by the students themselves, whereas they regarded language problems as a secondary, only minor contributing factor.

The Team urges the Department of Pharmacy and the Faculty of Medicine to take immediate actions, as detailed below.

Doctoral studies and curricula

Doctoral students are extremely important to the University, because they form an essential part of research teams and of teachers. From among them new staff members are recruited. They become skilled and academically educated workforce for many public and private positions. Doctoral studies and curricula, however, cannot be treated and evaluated in a similar way as master curricula, because they are more individual, personalized and specialized. Furthermore, currently only three doctoral students are in the doctoral training (one of them at the University of Helsinki), and consequently, detailed assessment of the performance of the doctoral curricula seems redundant. In any case, formal arrangements seem to be adequate.

The only concern the Team had regarding doctoral curricula, was the fact that doctoral students were not credited for their active participation in national and international scientific meetings. This should be corrected.

In 2001, the previous evaluation team proposed the establishment of a programme council for doctoral studies. The Department of Pharmacy decided not to follow this recommendation because of the highly personalized nature of doctoral studies in view of a small number of candidates. The Team agrees with this view.

I. MANAGEMENT OF EDUCATIONAL POLICY

The Department of Pharmacy has a clear mission and in recent years has invested a fair amount of dedicated work to establish curricula implementing a modern pharmaceutical education. The objectives of the new curricula, preparing students for their role as pharmacy experts rather than merely drug manufacturers, have been elaborated together with the Faculty of Medicine and a number of intra- and extra-faculty departments that contribute expertise and teaching units. Following earlier suggestions by an expert committee, a programme council overseeing the restructuring of the master studies has recently been established including representatives of all interested groups (different departments contributing teaching and/or practical courses, professional bodies, industry, the drug regulatory authority and students). The Team believes that this new body has the potential to promote significant improvements in curriculum development, provided the decision process is kept transparent and will not be overly dominated by conservative interests. In our view, a lasting impact of this important body would be facilitated by adopting a system of rotating chairmanship and by admitting a representative of the doctoral students. The latter group is the only one that has already been exposed to all aspects of the master curriculum and could provide particularly valuable input.

While mechanisms are in place to monitor the performance of the students, the performance of the teaching staff is judged via informal interactions and via analysis of regular student feedback. It was an impression of the Team that staff members had rather variable attitudes towards the development of new teaching skills in the face of perceived deficits and therefore need encouragement and support in implementing future changes.

With respect to teaching loads and, in particular, to providing state-of-the-art practical skills in laboratory work, the Department of Pharmacy operates at the very limits of its capacity. Proper functioning can only be maintained by extensive cooperation with other institutes of the Medical Faculty. Consequently, the Department receives significantly more outside support for its curricula than it can return by providing educational services to other units.

CONCLUSION RECOMMENDATIONS

1. The programme council should be the governing body in all aspects of management of pharmacy curricula. It should not replace staff (teacher) meetings, but act as a point where initiatives of all stakeholders are transparently considered, developed and instituted.
2. The Department of Pharmacy (and more generally, the Faculty and the University) should develop approaches to evaluate staff member performance and to develop guidance in the development of new teaching platforms.

II. STUDENTS

The admission of pharmacy students and the rules governing their participation in the curricula are fully conforming to the legal regulations. However, staff members as well as students pointed to major differences in the level of natural sciences education (in particular chemistry) between high schools, which have resulted in a serious handicap for part of the first year students. Such deficits appeared to contribute importantly to a high dropout rate of students during the first two study years. The Team felt that some kind of entrance examination or interview would help to alert students to their deficits. It would be helpful if the natural sciences faculty could offer an elective course, perhaps in the context of their

science teacher curriculum, designed to address deficits known to arise from insufficiencies of high school science education. We trust that these measures would contribute significantly to avoid the waste of money and time that is associated with premature study termination.

A tutoring system for first year students is in place but obviously cannot compensate for problems that arise in high schools prior to the entry into the pharmacy master curriculum. Moreover, a mentoring system for more advanced students should be established that early on counsels students in their choice of elective courses and supports those that develop an interest in research.

A system of continuous assessment of student achievements has been established. The Team feels that the newly established curriculum council would be in an ideal position to analyze these data and to use them for initiating improvements in the master curriculum.

The Team learned that a number of inter-university agreements, e.g. in the context of the European Erasmus Program, provide possibilities for student mobility. However, very few of the students apparently make use of these programs. Although variable reasons, including language barriers were given for this poor acceptance, it seemed that a major obstacle is the fear of students to loose this time because they are not credited for it. Since study programs at different European universities lack coordination, more flexibility on the part of the Pharmacy Department would be required to receive these more daring students back, to make use of their experiences and to facilitate credit transfer.

Even though there exists a functioning student organization, up to the present the overall influence of the students on study affairs appears modest at best. The Team trusts that the students can and will play a more prominent role in curriculum development as soon as the newly established curriculum council starts functioning.

CONCLUSION RECOMMENDATIONS

1. The Department of Pharmacy (and the Faculty of Medicine) should consider measures to ensure that the entering students could start at the same level in terms of specific knowledge requirements, such as those in chemistry or natural sciences.
2. Students should be encouraged to take advantage of the possibility of student exchange *via*, e.g. the Erasmus programme. On the other hand, the Department of Pharmacy (and the Faculty of Medicine) should be prepared to accept the credits earned in foreign institutions.

III. THE CURRICULUM

The Team found that the curriculum is in accordance to the Standard of Higher Education, professional standard, international legislation and the demands of the labour market. The curriculum objectives are clearly formulated and correspond to the requirements. Also, the curriculum is similar to comparable curricula in other European countries.

The curriculum is now more in line with the recommendations of the previous evaluation committee. The curriculum has changed from a chemistry-dominated knowledge accumulation to a more varied curriculum structure focussing on medicine, pharmacology and social pharmacy. The Team suggests introducing new modules based on both vertical and horizontal integration of existing courses.

The Team did not find it very efficient from the learning point of view that e.g. the basic pharmacology course is spread over the whole study year, providing only 1 lecture and 1 seminar per week. Although integration between subjects is advisable, such a “thinning” as above may not be the most efficient way to reach learning objectives.

The Team could see a need for more time and efforts being devoted to the development of teaching and learning methods in the education. Students could be given small research projects in combination with examinations in the form of written and oral reports. This would develop the students’ capabilities to undertake independent research later, both in their projects at the end of their master studies, and in their subsequent research towards doctoral degrees. The teachers ought to be encouraged to introduce even more problem-based teaching and learning methods, and to consider whether all the lectures given today are really needed. To implement these changes in teaching-learning methods the staff ought to get help and support from the pedagogical department at the University.

The education quality assurance system already in existence seems to be working well. However, the work of the programme council is still in the starting phase.

CONCLUSION RECOMMENDATIONS

1. Care should be taken to continuously adapt teaching methods to the changing requirements of the profession.

IV THE EDUCATIONAL (TEACHING) PROCESS

Teaching is mainly based on lectures, seminars and laboratory practices. Practising communication skills, which are of importance for patient counselling and practical work at pharmacy stores, are additional teaching methods used during social pharmacy studies. Education is outcome-based and well-structured study modules with clear learning goals form a good framework for pharmacy studies.

In general, the Team would like to emphasise the rapid improvement of the infrastructure of the Department of Pharmacy, especially when it comes to class rooms, laboratories and libraries while the only exception remains the apparent lack of up-to-date analytical equipments. The good infrastructure is important for the successful progress of studies and for the commitment of students. The computer facilities with easy access to internet connections and the availability of electronic versions of research journals help students to obtain up-to-date knowledge of pharmacy and related areas. Study material is in most cases provided to students before lectures in electronic form making it easy to follow lectures and seminars and facilitating the preparation of examinations. Students have access also to computer-based simulation programs which are used as additional study materials.

The Team considers that the Department of Pharmacy should introduce increasingly also other types of teaching and learning methods, such as learning diaries and portfolios, project work as well as the use of essay writing in order to facilitate self-reflection and critical thinking. The skills are needed in team work, to improve presentation skills, and the overall professional performance as future pharmacists. During the interview with students (11 students selected independently by the Students committee and representing different study years), the Team was left with the impression that assessment of study achievements is objective and based on goals of the pharmacy program. Students also expressed their general

satisfaction with the newly reformulated curriculum and learning atmosphere at the Department of Pharmacy.

CONCLUSION RECOMMENDATIONS

1. Teaching methods and approaches should strive to lead students towards self-reflection and critical thinking.

V. ORGANISATION OF STUDIES

The Master Programme in Pharmacy is based on a detailed academic calendar and well-designed study modules. The order of different study modules is rational and is based on accumulating knowledge relevant to future working life. Based on the interview with students the Team was left with the impression that the students get sufficient advance information of the time table. They also confirm that their study load has been estimated correctly and ECTS credit points are appropriately attributed. Students' study progress is systematically analysed by a recently introduced electronic feedback system.

The Department has excellent relationships to external stakeholders, such as pharmacies that are involved in the practical work of students during the 5th year of studies. However, the Team noted that the number of teaching pharmacies is very limited and should be increased.

The Team found that the introductory semester is too heavily leaning towards more traditional, even historical, subjects of pharmacy education. It would be beneficial, also to motivate the students towards their future occupations in public and private sectors, to offer more pharmacology- and medicine-related subjects earlier during the curriculum.

CONCLUSION RECOMMENDATIONS

1. The design and the contents of the introductory courses during the first semester ought to be reconsidered to increase the motivation of students at the initiation of their pharmacy studies.

VI. TEACHING STAFF

The teaching staff does have the needed formal qualifications with many members having doctoral degrees. In some areas, as in Social Pharmacy experts from outside the university are often involved, which give valuable inputs to the education.

It is more problematic that some of the staff members are currently not involved in research. In the Team's opinion, a university teacher ought to maintain a research project. Of course there are a number of reasons for this situation, such as lack of equipment, lack of time, age structure of the staff members, and sometimes lack of necessary research networks to undertake and encourage research. To change this situation, a number of reforms could be made, e.g. international cooperation, cooperative arrangements with other departments in the University and with other institutions outside the University, provision of new equipment, and creation of appropriate positions for young teachers and researchers. Also, exchange programmes, especially for younger teachers/researchers would bring fresh ideas both to teaching and research. This would greatly benefit not only the Department of Pharmacy, but also the Faculty and the University.

As mentioned above the University of Tartu has to develop courses especially aimed to improve the teaching and learning methods in life sciences. There, e.g. teachers already having developed new forms of teaching could demonstrate their approach followed by open discussions. This might encourage other teachers to make similar improvements. Today the pedagogical courses offered by the University are far too basic for the teachers of the Department of Pharmacy. They do not find the courses interesting and relevant enough for their teaching task.

The Team insists that a system for the evaluation of the staff should be developed and adopted. This is not the task of the Department of Pharmacy, but should be performed at the University level. It is of utmost importance that staff members get fair and realistic feedback for their performance to be able to develop their professional skills.

CONCLUSION RECOMMENDATIONS

1. Teaching should be generally performed by teachers involved in research programmes.
2. A system for the evaluation of the staff should be implemented.

VII LEARNING ENVIRONMENT AND RESOURCES

In general, the Team was impressed by the high quality of the infrastructure of the Department of Pharmacy (with the exception of serious lack of important technical equipment as already stated above). The study rooms and teaching laboratories seem to be in conformity with health-protection and safety requirements. The Department has its own library with sufficient amounts of international textbooks and handbooks and a well-equipped computer class in addition to the one at Biomedicum. These give excellent opportunities for students to obtain study material, as well as to prepare seminars and examinations. Such facilities at the departmental level certainly enhance internal cohesion among the pharmacy students and help to create an optimal learning atmosphere. Also photo-copying is available at a reasonably low price.

CONCLUSION RECOMMENDATIONS

1. Lack of important technical equipment is seriously affecting the otherwise well-structured learning environment.

VIII. FEEDBACK AND QUALITY ASSURANCE

Quite some effort has been invested in recent years on all levels to establish a quality assurance system. On the university level the study information system (SIS) collects and evaluates student feedback. Additional feedback, including program assessment by graduates and employers is acquired by the Medical Faculty and by the Department of Pharmacy. In spite of these efforts some deficits were noted both from teaching staff and students. Teachers felt that student feedback especially the one via SIS remained too general and unspecific to result in helpful suggestions for curriculum improvement. Students felt somewhat frustrated because they did neither see the results of feedback analysis nor were they ever alerted to any changes hopefully introduced on the basis of their feedback. The Team strongly supports the

idea to convert student feedback from a one-way road into an instrument of mutual information allowing strengthening the ties between the students and their institution.

Employers expressed clear preferences and expectations with respect to the education of future pharmacists. The Team had the impression that the department was quite willing to adapt curricula according to the changing role of pharmacists in the society. On the other hand, the contact with alumni remains rather fragmentary and should be improved. This would provide much needed information on whether graduates feel adequately prepared for their professional careers.

The Department of Pharmacy has established relationships with foreign educational institutions. From the student point of view, these links would seem more profitable for doctoral students than for students in the master curriculum. Yet, the Team feels that the quality of the pharmaceutical education could profit significantly from an increased exchange of lecturers with other institutions inside and outside of Estonia. In the field of social pharmacy these possibilities seem to have been seized successfully. We recommend increasing efforts to establish such exchanges also for other fields taught in the department.

CONCLUSION RECOMMENDATIONS

1. Feedback from SIS should be communicated to the students.
2. Contacts with alumni should be a regular way of achieving information from professionals.

IX. RESEARCH CONDITIONS AND LEVEL (*additional information*)

Although research at the Department of Pharmacy was not a primary objective of the present evaluation, nevertheless it is of importance as a necessary background for high-quality education and for the proper learning environment in the University. During the research assessment in 2003, the research performed at the Department was judged as good to satisfactory. The Department itself and the Team are of the opinion that, although some advances since 2003 have been made the research still lacks adequate resources and equipment.

The Team got access to some master and doctoral theses during the visit to the departmental library. The written master theses seem adequate for their purposes, although in the Team's opinion, more time to experimental work would have improved the outcome. It has to be admitted, however, that the Team's opinion is based only on a few inspected cases and on discussions with the staff and students.

Doctoral theses are based on at least three papers published in international peer-reviewed journals and as such seem to be of adequate level. Several students with pharmacy background have performed their doctoral studies in other departments of the Faculty of Medicine. Therefore the actual number of theses is higher than is obvious from the statistics of the Department of Pharmacy.

As clearly expressed by the staff of the Department of Pharmacy, research is badly suffering from the lack of appropriate research equipment, except in those areas where experimental laboratory studies are not required. Collaboration at local, domestic and international level ameliorates the situation, but does not really help in creating a strong local research

environment. Laboratory spaces, as they are after the relocation of the Department into new premises, are appropriate as such.

CONCLUSION RECOMMENDATIONS

1. A most urgent measure to improve research performance of the Department of Pharmacy is to secure adequate support for research, i.e. equipment and resources.
2. Faculty-level measures to improve research conditions might be to establish more appropriate core services available to all research groups and creating larger research units through mutual interests and goals.

Part III

Accreditation Conclusions

In general, the Team was rather satisfied with the developments and plans of the Department of Pharmacy. There is no doubt that in many areas, especially pharmacy education, the Department of Pharmacy functions well, the staff is competent and mostly motivated and the students feel to be an essential part of the academic community. In this respect, the accreditation conclusions of the Team are unequivocally positive. However, there are several points, which remain to be addressed energetically in the near future and these are listed below. All of them have been dealt with in previous sections in the evaluation report, but the Team feels these are important to recapitulate and emphasize here.

1. Appropriate equipment is a necessary prerequisite for conducting high-quality research and education in pharmacy. This is the most urgent matter to be solved.
2. The Programme Council should become a key body for the development of pharmacy education at the Department of Pharmacy.
3. Staff members should be encouraged to improve their research activities, because research-based education is the key for raising the level and quality of pharmacy education, both at the master and doctoral level.
4. The participation of teaching staff in pharmacy-directed didactic courses is necessary for the transformation of teaching towards student participation-centered learning techniques.
5. The Department of Pharmacy should consider appropriate measures to decrease a high drop-out rate and prevent unduly prolongation of studies. Such measures could include entrance examinations and additional natural science courses to bring the skills of entering students to an adequate level.
6. The Department of Pharmacy needs a constant influx of young doctoral students to be able to preserve the high level of its staff. The Team considers an elective research tract during the master curriculum as a promising way to ensure the availability of motivated candidates for doctoral studies.
7. As science is international, the Team cannot overemphasise the internationalization of both staff and students via all possible avenues available to a really global science.

Part IV

Accreditation Recommendations

ADVICE ABOUT ACCREDITATION

The Committee assessed three programmes at the University of Tartu.

In the opinion of the Committee the following accreditation advice is given:

80419 (8896212) Pharmacy (Bachelor and Master's integrated studies) – Full accreditation

2707 (8505202) Pharmacy (Doctoral studies) – Full accreditation

80361 (8896212) Pharmacy (Doctoral studies) – Full accreditation

Abbreviated Checklist for Evaluation Experts (Curricula)

Based on the Requirements for Accreditation of Curricula of Universities in Estonia

(Regulation – Government of the Republic of Estonia – 2003)

University of Tartu

University: _____

80419 (8896212) Pharmacy (Bachelor and Master's integrated studies)

Curriculum: _____

Oct 22-23, 2008

Expert: _____ Visit Dates: _____

Requirement I: Management of Educational Policy

Requirements (Criteria)	Met	Concern	Not Met
1. The university has clearly formulated mission. Units develop instructions, plans, policy, and procedures according to it. Responsibilities for each area are formulated clearly.	2		
2. The objectives of a curriculum are formulated and are known to all relevant academic units. Units collaborate in curriculum implementation.	2		
3. A curriculum council should exist, performing systematic analysis of academic quality of curriculum. Program is modified where and when needed.	2		
4. A supervisory system exists to monitor the performance of faculty and students.		1	
5. Structural unit's participation in providing education on the bases of curricula operated by other units is clearly defined.	2		

Comments: _____

Requirement II: Students

Requirements (Criteria)	Met	Concern	Not Met
1. Admission procedures and the conditions for suspension, continuation and completion of studies strictly correspond to regulations and are publicized.	2		
2. Adequate, complete and well-organised advising is offered to student candidates.	2		
3. System exists to monitor student achievement; unit uses results to improve curriculum.	2		
4. Possibilities exist for student mobility and credit transfer.	2		

Comments: _____

Requirement III: Curriculum

Requirements (Criteria)	Met	Concern	Not Met
1. Curriculum complies with requirements for curricula of the same educational level taking into account industrial and economical development in Estonia and Europe.	2		
2. Curriculum objectives are clearly formulated and must reflect graduation requirements. Name and content of a curriculum are in accordance with the objectives of the curriculum	2		
3. Curriculum is comparable with curricula of universities within Europe.	2		
4. Curriculum is based on cumulative entirety of all subjects and enables students to obtain level of general, specialised, and professional education with sufficient competitiveness in labour market.	2		
5. Optimal proportion of lecture and independent study is available with sufficient materials to develop good learning habits.	2		
6. Curriculum involves problem-solving tasks and creativity at all levels.		1	
7. Graduating procedures clear and guarantee objective evaluation.	2		
8. Quality assurance systems and their realisation introduced in departments and units.	2		

Comments: _____

Requirement IV: Educational (Teaching) Process

Requirements (Criteria)	Met	Concern	Not Met
1. Modern teaching methods used and adaptable to deliver knowledge in a most rational manner.	2		
2. Computers and licensed software extensively used in teaching and learning.	2		
3a. Student assessment is objective and based on goals of program. Assessment methods developing social competence exist.	2		
3b. Flexible examination procedures exist. System for resolving protests exists	2		

Comments: _____

Requirement V: Organisation of Studies

Requirements (Criteria)	Met	Concern	Not Met
1. Organisation of studies is based on a detailed academic calendar. Organisation of studies assures rational use of student's time and creates conditions for best achievement.	2		
2. Organisation of studies is clearly defined and public. Students receive good advice and sufficient/timely information on organization and content of studies.	2		
3. Student study loads are appropriate and take into account independent study too.	2		
4. & 5. Organisation of studies is continuously improved by systematic analyses of student success and failures. System for analysing and evaluating student progress, study loads and results exists. Recommendations of curriculum council and student council are taken into account.	2		
6. University implements modern means of information technology to register and to monitor their study results.	2		
7. University has co-operation relationships to organise practical training.	2		

Comments: _____

Requirement VI: Teaching staff

Requirements (Criteria)	Met	Concern	Not Met
1a. Sufficient faculty exists with needed qualifications.	2		
1b. The members of teaching staff meet the requirements of the Universities Act	2		
1c. The members of teaching staff meet the requirements of the Standard of Higher Education and the Requirements for Teacher Training.	2		
1d. Faculty must systematically improve their qualifications taking part in research and development, seminars and conferences and continuing education.		1	
2. University has policies of academic promotion, division of duties and renewal of personnel. The teaching staff has opportunities for pedagogical self-development.		1	

Comments: _____

Requirement VII: Learning Environment

Requirements (Criteria)	Met	Concern	Not Met
1. Appropriate number of study rooms, and amount of inventory, equipment, educational and scientific literature. Study rooms in conformity with health-protection and safety requirements.	2		
2. Number of laboratories, training rooms and bases for practical training is appropriate for providing education and research according to curriculum.		1	
3. Study and research library services available to all members of university. There are competent workers and technical aids necessary for serving.	2		
4. Study materials are available for students.	2		
5. Internal data network and connections with non-institutional networks exist.	2		
6. Operative and accessible facility to photocopy study materials	2		
7. Competent personnel deal with maintenance, development and repair of learning environment	2		
8. Long-term development plan to improve the condition of learning environment.	2		

Comments: _____

Requirement VIII: Quality Assurance

Requirements (Criteria)	Met	Concern	Not Met
1. Quality assurance is based on students' estimation of education, professional career of graduates, and employers' satisfaction with theoretical knowledge and practical skills of graduates.	2		
2. Unit gathers enough information about working career of graduates regarding employer satisfaction of educational level, knowledge, and skills. Unit gathers data systematically and uses it to improve the quality of the program.	2		
3. Relationships with foreign educational institutions exist.	2		

Comments: _____

Requirements (Criteria)	Met	Concern	Not Met
I	X		
II	X		
III	X		
IV	X		
V	X		
VI	X		
VII	X		
VIII	X		

Further Observations

Abbreviated Checklist for Evaluation Experts (Curricula)

Based on the Requirements for Accreditation of Curricula of Universities in Estonia

(Regulation – Government of the Republic of Estonia – 2003)

University of Tartu

University: _____

2707 (8505202) Pharmacy (Doctoral studies)

Curriculum: _____

Oct 22-23, 2008

Expert: _____ Visit Dates: _____

Requirement I: Management of Educational Policy

Requirements (Criteria)	Met	Concern	Not Met
1. The university has clearly formulated mission. Units develop instructions, plans, policy, and procedures according to it. Responsibilities for each area are formulated clearly.	2		
2. The objectives of a curriculum are formulated and are known to all relevant academic units. Units collaborate in curriculum implementation.	2		
3. A curriculum council should exist, performing systematic analysis of academic quality of curriculum. Program is modified where and when needed.	2		
4. A supervisory system exists to monitor the performance of faculty and students.	2		
5. Structural unit's participation in providing education on the bases of curricula operated by other units is clearly defined.	2		

Comments: _____

Requirement II: Students

Requirements (Criteria)	Met	Concern	Not Met
1. Admission procedures and the conditions for suspension, continuation and completion of studies strictly correspond to regulations and are publicized.	2		
2. Adequate, complete and well-organised advising is offered to student candidates.	2		
3. System exists to monitor student achievement; unit uses results to improve curriculum.	2		
4. Possibilities exist for student mobility and credit transfer.	2		

Comments: _____

Requirement III: Curriculum

Requirements (Criteria)	Met	Concern	Not Met
1. Curriculum complies with requirements for curricula of the same educational level taking into account industrial and economical development in Estonia and Europe.	2		
2. Curriculum objectives are clearly formulated and must reflect graduation requirements. Name and content of a curriculum are in accordance with the objectives of the curriculum	2		
3. Curriculum is comparable with curricula of universities within Europe.	2		
4. Curriculum is based on cumulative entirety of all subjects and enables students to obtain level of general, specialised, and professional education with sufficient competitiveness in labour market.	2		
5. Optimal proportion of lecture and independent study is available with sufficient materials to develop good learning habits.	2		
6. Curriculum involves problem-solving tasks and creativity at all levels.	2		
7. Graduating procedures clear and guarantee objective evaluation.	2		
8. Quality assurance systems and their realisation introduced in departments and units.	2		

Comments: _____

Requirement IV: Educational (Teaching) Process

Requirements (Criteria)	Met	Concern	Not Met
1. Modern teaching methods used and adaptable to deliver knowledge in a most rational manner.	2		
2. Computers and licensed software extensively used in teaching and learning.	2		
3a. Student assessment is objective and based on goals of program. Assessment methods developing social competence exist.	2		
3b. Flexible examination procedures exist. System for resolving protests exists	2		

Comments: _____

Requirement V: Organisation of Studies

Requirements (Criteria)	Met	Concern	Not Met
1. Organisation of studies is based on a detailed academic calendar. Organisation of studies assures rational use of student's time and creates conditions for best achievement.	2		
2. Organisation of studies is clearly defined and public. Students receive good advice and sufficient/timely information on organization and content of studies.	2		
3. Student study loads are appropriate and take into account independent study too.	2		
4. & 5. Organisation of studies is continuously improved by systematic analyses of student success and failures. System for analysing and evaluating student progress, study loads and results exists. Recommendations of curriculum council and student council are taken into account.	2		
6. University implements modern means of information technology to register and to monitor their study results.	2		
7. University has co-operation relationships to organise practical training.	2		

Comments: _____

Requirement VI: Teaching staff

Requirements (Criteria)	Met	Concern	Not Met
1a. Sufficient faculty exists with needed qualifications.	2		
1b. The members of teaching staff meet the requirements of the Universities Act	2		
1c. The members of teaching staff meet the requirements of the Standard of Higher Education and the Requirements for Teacher Training.	2		
1d. Faculty must systematically improve their qualifications taking part in research and development, seminars and conferences and continuing education.	2		
2. University has policies of academic promotion, division of duties and renewal of personnel. The teaching staff has opportunities for pedagogical self-development.	2		

Comments: _____

Requirement VII: Learning Environment

Requirements (Criteria)	Met	Concern	Not Met
1. Appropriate number of study rooms, and amount of inventory, equipment, educational and scientific literature. Study rooms in conformity with health-protection and safety requirements.	2		
2. Number of laboratories, training rooms and bases for practical training is appropriate for providing education and research according to curriculum.	2		
3. Study and research library services available to all members of university. There are competent workers and technical aids necessary for serving.	2		
4. Study materials are available for students.	2		
5. Internal data network and connections with non-institutional networks exist.	2		
6. Operative and accessible facility to photocopy study materials	2		
7. Competent personnel deal with maintenance, development and repair of learning environment	2		
8. Long-term development plan to improve the condition of learning environment.	2		

Comments: _____

Requirement VIII: Quality Assurance

Requirements (Criteria)	Met	Concern	Not Met
1. Quality assurance is based on students' estimation of education, professional career of graduates, and employers' satisfaction with theoretical knowledge and practical skills of graduates.	2		
2. Unit gathers enough information about working career of graduates regarding employer satisfaction of educational level, knowledge, and skills. Unit gathers data systematically and uses it to improve the quality of the program.	2		
3. Relationships with foreign educational institutions exist.	2		

Comments: _____

Requirements (Criteria)	Met	Concern	Not Met
I	X		
II	X		
III	X		
IV	X		
V	X		
VI	X		
VII	X		
VIII	X		

Further Observations

Abbreviated Checklist for Evaluation Experts (Curricula)

Based on the Requirements for Accreditation of Curricula of Universities in Estonia

(Regulation – Government of the Republic of Estonia – 2003)

University of Tartu

University: _____

80361 (8896212) Pharmacy (Doctoral studies)

Curriculum: _____

Oct 22-23, 2008

Expert: _____ Visit Dates: _____

Requirement I: Management of Educational Policy

Requirements (Criteria)	Met	Concern	Not Met
1. The university has clearly formulated mission. Units develop instructions, plans, policy, and procedures according to it. Responsibilities for each area are formulated clearly.	2		
2. The objectives of a curriculum are formulated and are known to all relevant academic units. Units collaborate in curriculum implementation.	2		
3. A curriculum council should exist, performing systematic analysis of academic quality of curriculum. Program is modified where and when needed.	2		
4. A supervisory system exists to monitor the performance of faculty and students.	2		
5. Structural unit's participation in providing education on the bases of curricula operated by other units is clearly defined.	2		

Comments: _____

Requirement II: Students

Requirements (Criteria)	Met	Concern	Not Met
1. Admission procedures and the conditions for suspension, continuation and completion of studies strictly correspond to regulations and are publicized.	2		
2. Adequate, complete and well-organised advising is offered to student candidates.	2		
3. System exists to monitor student achievement; unit uses results to improve curriculum.	2		
4. Possibilities exist for student mobility and credit transfer.	2		

Comments: _____

Requirement III: Curriculum

Requirements (Criteria)	Met	Concern	Not Met
1. Curriculum complies with requirements for curricula of the same educational level taking into account industrial and economical development in Estonia and Europe.	2		
2. Curriculum objectives are clearly formulated and must reflect graduation requirements. Name and content of a curriculum are in accordance with the objectives of the curriculum	2		
3. Curriculum is comparable with curricula of universities within Europe.	2		
4. Curriculum is based on cumulative entirety of all subjects and enables students to obtain level of general, specialised, and professional education with sufficient competitiveness in labour market.	2		
5. Optimal proportion of lecture and independent study is available with sufficient materials to develop good learning habits.	2		
6. Curriculum involves problem-solving tasks and creativity at all levels.	2		
7. Graduating procedures clear and guarantee objective evaluation.	2		
8. Quality assurance systems and their realisation introduced in departments and units.	2		

Comments: _____

Requirement IV: Educational (Teaching) Process

Requirements (Criteria)	Met	Concern	Not Met
1. Modern teaching methods used and adaptable to deliver knowledge in a most rational manner.	2		
2. Computers and licensed software extensively used in teaching and learning.	2		
3a. Student assessment is objective and based on goals of program. Assessment methods developing social competence exist.	2		
3b. Flexible examination procedures exist. System for resolving protests exists	2		

Comments: _____

Requirement V: Organisation of Studies

Requirements (Criteria)	Met	Concern	Not Met
1. Organisation of studies is based on a detailed academic calendar. Organisation of studies assures rational use of student's time and creates conditions for best achievement.	2		
2. Organisation of studies is clearly defined and public. Students receive good advice and sufficient/timely information on organization and content of studies.	2		
3. Student study loads are appropriate and take into account independent study too.	2		
4. & 5. Organisation of studies is continuously improved by systematic analyses of student success and failures. System for analysing and evaluating student progress, study loads and results exists. Recommendations of curriculum council and student council are taken into account.	2		
6. University implements modern means of information technology to register and to monitor their study results.	2		
7. University has co-operation relationships to organise practical training.	2		

Comments: _____

Requirement VI: Teaching staff

Requirements (Criteria)	Met	Concern	Not Met
1a. Sufficient faculty exists with needed qualifications.	2		
1b. The members of teaching staff meet the requirements of the Universities Act	2		
1c. The members of teaching staff meet the requirements of the Standard of Higher Education and the Requirements for Teacher Training.	2		
1d. Faculty must systematically improve their qualifications taking part in research and development, seminars and conferences and continuing education.	2		
2. University has policies of academic promotion, division of duties and renewal of personnel. The teaching staff has opportunities for pedagogical self-development.	2		

Comments: _____

Requirement VII: Learning Environment

Requirements (Criteria)	Met	Concern	Not Met
1. Appropriate number of study rooms, and amount of inventory, equipment, educational and scientific literature. Study rooms in conformity with health-protection and safety requirements.	2		
2. Number of laboratories, training rooms and bases for practical training is appropriate for providing education and research according to curriculum.	2		
3. Study and research library services available to all members of university. There are competent workers and technical aids necessary for serving.	2		
4. Study materials are available for students.	2		
5. Internal data network and connections with non-institutional networks exist.	2		
6. Operative and accessible facility to photocopy study materials	2		
7. Competent personnel deal with maintenance, development and repair of learning environment	2		
8. Long-term development plan to improve the condition of learning environment.	2		

Comments: _____

Requirement VIII: Quality Assurance

Requirements (Criteria)	Met	Concern	Not Met
1. Quality assurance is based on students' estimation of education, professional career of graduates, and employers' satisfaction with theoretical knowledge and practical skills of graduates.	2		
2. Unit gathers enough information about working career of graduates regarding employer satisfaction of educational level, knowledge, and skills. Unit gathers data systematically and uses it to improve the quality of the program.	2		
3. Relationships with foreign educational institutions exist.	2		

Comments: _____

Requirements (Criteria)	Met	Concern	Not Met
I	X		
II	X		
III	X		
IV	X		
V	X		
VI	X		
VII	X		
VIII	X		

Further Observations

