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# Strategic Planning for the Education Process in the Next Century\*

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The Technical University of Denmark (TUD) aims to maintain its standing as a national technological university renowned for high standards, and, by a careful choice of forms of instruction and examination, to ensure that students acquire the breadth of competency for which TUD graduates are noted. The paper presents a strategic planning document for the education process in the TUD which will lead the University into the 21st century.

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## TUD: A UNIVERSITY IN DYNAMIC CONTACT WITH SOCIETY

The Technical University of Denmark (TUD) considers it important to point to new paths that actively contribute to the solution of problems relating to society as a whole, to people as individuals, and to natural resources. We consider it important that our graduates actively participate in society's ongoing debate on the many aspects of technological progress and point to new solutions and ways ahead through their activities within and outside the university environment.

The TUD offers programs leading to the degrees of BSc, MSc and PhD. It provides a study structure that makes it possible to compose a study program that incorporates elements from different disciplines and departments. It is also possible for holders of a BSc in engineering to enrol in a program leading to an MSc, and for many holders of the Master's degree to study for their PhD. Adequate study components taken at other universities in Denmark or abroad can also form part of a study program for a TUD degree.

## TUD DEGREE PROGRAMS

The TUD will retain its MSc and BSc programs, including those in Food Science and Technology, as

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\* An expanded version of a keynote address presented at the 2nd UICEE Annual Conference on Engineering Education, where it was awarded the UICEE gold award (joint third grade with one other paper), by popular vote of Conference participants, for the most significant contribution to the field of engineering education

separate self-contained programs. The TUD will enter into strategic alliances with other educational establishments, and we believe that such alliances will become increasingly important. Alliances with other establishments are an important tool in facilitating the transfer of academic credits when students switch courses, and can increase possibilities for creating combination programs. There will continue to be an interplay between the three programs offered at the TUD. This will be achieved by a system of individual study plans allowing students to transfer academic credits and enrol in *superstructure* programs.

The TUD produces a fully trained engineering professional with a distinct technical profile in three-and-a-half years. Over the coming period, the TUD will continue to strengthen the development of program content, ensuring that the BSc program will retain its standing as a short, high-quality training in engineering science.

The TUD's intention is that the MSc program should lead to a degree that is a professional qualification in itself, and can also serve as the basis for doctoral studies. The TUD will:

- ensure the thoroughness of technical competence imparted through study of the basic scientific disciplines;
- ensure a close correspondence between the components of the study plan and its levels;
- develop a number of distinct specialisation options for the final stage of the MSc program.

These must reflect:

- technological progress in the relevant fields and the needs of potential employers;
- formulate clear expectations regarding students' progression in knowledge at all stages of the program.

The TUD's PhD program is a central part of the University's educational and research activities. The TUD wishes its training of researchers (doctoral studies) to remain a characteristic of its research environment.

## FROM STRATEGIC PLAN '95 TO STRATEGIC PLAN '98

In 1995 the TUD presented for the first time a plan designed to cover the University's main activities both on the teaching and on the research sides. Plans had been formulated previously for the various activities, but it was in the 1995 plan that the University (which was created by the amalgamation on 1 January 1995 of the TUD's predecessor with the Engineering Academy of Denmark and Elsinore College of Engineering) first formulated an overall strategy for teaching and research activities.

Strategic Plan '95 laid down guidelines and set targets that could be worked toward by students, staff and management. The main emphasis in the plan was the focusing that was to take place on twelve areas of technology and on the associated basic disciplines of mathematics, physics and chemistry. This established an important point of reference for decisions on activities and resources in the ensuing period.

The main elements in Strategic Plan '95 can be summarised as follows:

- A focus on 12 principal research areas.
- Gathering activities together in larger and fewer departments.
- A new system for setting staff target figures and a new method of determining the Staff-Student Committees' rights.
- The requisition of resources for student instruction.

By focusing on 12 research areas the strength possessed by the TUD in a range of central research areas has become significantly more apparent. This has contributed to attracting external funding, making it possible to increase our activities in several central research areas.

The farsightedness of the TUD's selection of research focus areas is confirmed by the degree to which they correspond to the latest priorities set out

in national research strategies and in the EU's *Fifth Framework Program for Research and Technological Development*.

## THE PREPARATION PHASE LEADING TO STRATEGIC PLAN '98

A principal feature of Strategic Plan '95 was a focusing and strengthening of research at the TUD. It was therefore decided at an early stage of the preparatory work on Strategic Plan '98 to place the main emphasis this time on our educational programs and instruction. In the light of experience gained in the preparation of Strategic Plan '95, a preparatory process took place in 1997-98 that involved the TUD's management and the Staff-Student and Sector Committees; it also involved listening to the points of view of potential employers. At the beginning of December 1997, a seminar was held at the TUD in which a number of leading employers participated and presented their visions of the kind of problems that engineering graduates will have to solve in the future. The seminar concluded with a discussion involving the many members of the TUD staff who attended.

It was clear at the seminar that the TUD's strength lies in the supply of practically and scientifically well-grounded graduates. Employers also wanted a number of new competencies, with emphasis on an increased ability to communicate and work in interdisciplinary teams, and good foreign language skills. There was broad agreement between the internal and external participants in the seminar that the development of these new skills must not be to the detriment of the graduates' level of subject knowledge or grounding in the basic disciplines of mathematics, physics and chemistry, but that the new skills should be brought up to the requisite level by integration into the instruction and by the development of new forms of examination.

The process of preparing Strategic Plan '98 has revealed agreement between the management, the Staff-Student and Sector Committees, employees and students on a range of general objectives for the TUD's development on the teaching side. The aim is to effect a basic change of attitudes and a refining of the concept of knowledge acquisition in line with the phrase *From Teaching to Learning*.

## CENTRES AS STRATEGIC TOOLS

There is at present a considerable imbalance in the age profile of the scientific staff in the TUD's departments. A demographically balanced age distribution

could be defined as a distribution with approximately the same number of employees in the various age categories.

Without making very precise retirement predictions, rough estimates indicate that staff losses due to retirement at the TUD over the next five years will probably total more than 110 people, corresponding to one fifth of the allocated number of positions. For large departments with about 20-25 employees, this corresponds to an average loss of four to five members of the scientific staff, with the consequence that the TUD will be moving from a period of limited staff loss due to retirement into a period with a very comprehensive shift towards the younger generation in the staff age distribution.

With the existing age distribution and current funding models, the development of the instruction provided by the TUD and of its research areas has been dependent in a number of cases on external funds. The University will continue to seek to attract external funding, using as one means to this end the establishment of research centres within strategically important fields.

These centres are important in connection with the accelerated change in the staff age profile, and therefore the need arises for a long-term *anchoring* of scientific, technical and administrative personnel attached to the centres. The TUD's policy is that this should take place gradually, as the areas concerned prove to be viable. In the coming three years, the TUD will actively apply the centre concept to the strategic development of the University's focus areas in research and teaching.

## **THE TUD'S DEGREE PROGRAM: THE DEMANDS OF THE FUTURE**

Changes that are taking place in the world around us necessitate ongoing development of the education and training given to future Danish engineering graduates. Thus, it is clear that product development and innovation is going to be very centrally placed in future commercial competition. Competition will intensify in step with increasing globalisation, which requires completely new markets to be cultivated in a race with companies from all around the world. Within this trend, a number of target areas can be identified for the further development of the TUD's educational programs.

A considerable change is taking place in Danish industry, with strongly growing demand for graduate engineers of extremely high competence in fields which, by and large, did not exist ten years ago. Many companies have established themselves in niches

where their dominant position worldwide depends on continuing to be at the forefront of their particular field. The ongoing need of companies to recruit well qualified technologists therefore makes great demands on the TUD's ability to maintain and develop its educational/research environments so that they can both attract the requisite number of students and also ensure that students receive an education that will make them well able to hold their own both in a Danish and an international context.

Our graduates will need to be able to deal with ever more complex problems, partly because of the ever increasing pace of development of new product and new methods of production. There is also a tendency towards increasing complexity of products (*knowledge-heavy* products) and a trend away from mass production towards customisation of mass-produced products, and a greater emphasis on the relation between price and function, as well as an increasing demand for sustainable production.

Students must, as an integral part of their courses, develop collaborative skills, including the ability to work in interdisciplinary teams, in order to be able to function effectively and appropriately in their future working lives. Interdisciplinary teamwork will gain more and more importance in the labour market in the future in consequence of the growing complexity of tasks.

The future will also demand a higher level of ability to communicate about technically complex matters, both to members of other professions and to lay people. Successful collaboration depends on the ability to communicate available knowledge effectively.

Our graduates must be at home with advanced application of IT, regardless of whether their specialisation lies within that area or elsewhere. It must therefore be included as an integral part of the programs.

Foreign language skills must also be taught as an integral part of the programs due to the increasing globalisation of industry. Globalisation also means that, in future, job hunting will take place to an increasing extent in competition with graduates from other countries; and a higher degree of international mobility must also be anticipated in Danish graduates job seeking. The TUD will therefore continue to expand the existing opportunities for studying abroad.

Students must acquire the ability to put technology and technical science into a societal context. Thus, knowledge and understanding of the external environment, the working environment and social conditions in general must be included in the instruction given, not especially in the form of actual courses, but integrally in the subjects studied.

Students must be made to realise that to be awarded an academic title does not imply that one has finished learning. Technological and social progress necessitate that graduates keep themselves constantly up to date with developments in their field and in other fields as well.

## **NATIONAL EDUCATION POLICY AND THE TUD**

A considerable portion of the debate on education policy, and also of education policy decisions, in recent years has been about ensuring greater flexibility in higher education so as to enable the individual to build further on existing competencies obtained from a short or medium-length higher education, such as a Bachelor degree. It has also been an important requirement that students and graduates should be able to transfer existing competencies to another program so that it would not be necessary for an individual who wanted to continue his/her studies in a different direction or take another type of combination program to start again from the beginning.

At the TUD, approximately 45% of new students enrol in the three-and-a-half year BSc program, whilst 55% opt for the five year MSc program from the start. In neither case do students particularly view the other program as their second priority. Combining the two into one BSc-MSc program would therefore very probably lead to a lower intake of new students and thereby to fewer graduates being produced, especially at Bachelor level. The experience of Aalborg University also indicates that very few would opt to discontinue their studies on reaching Bachelor level.

Moreover, having separate programs gives optimum conditions for ensuring the quality of the two programs whilst taking account of their differing educational emphases. On the one hand is the short, self-contained BSc program, in which importance is attached to ensuring that students achieve a level of practical accomplishment after three-and-a-half years' study that will enable them to function in a qualified engineer's job; and on the other, is the research-based five year program, one of the purposes of which is to ensure that a sufficient number of students achieve a level of theoretical knowledge that is extensive and confident enough to provide sufficient potential for future research in the engineering sciences. The difference between the two programs lies not *just* in their length, but also in their methodological approach. This may also be one of the reasons why only a few students regard the other programs as their second priority.

At the TUD, inter-program flexibility will be achieved not by funnelling all students through the same entrance door, but rather by providing:

- credit transfer arrangements, whereby students can switch between the two programs at any point in the course;
- recognition of their studies, so that individual study plans can be drawn up in which credit can be given for as much as possible of the foregoing studies;
- a superstructure program, which is a two year continuation program for Bachelor level graduates leading to the Master's degree. This program is open to all holders of a Bachelor's degree in engineering.

How the development of the study programs is to be achieved at a time when the staff age profile will be changing and in order to enable the TUD to ensure that the BSc program retains its high quality in the future should be discussed. The TUD believes that it would be greatly beneficial to introduce research-oriented topics in the BSc departments as a supplement to the specialisation options offered. Such a development, potentially offering courses right up to PhD level in specially selected areas, would be useful in the preparation for the change in the staff age profile in the BSc departments, and is probably also necessary in order to obtain qualified staff. It will furthermore be appropriate to discuss in this connection the staffing of the BSc departments with technical and administrative personnel. Strengthening the BSc departments' research and development activities will also improve the opportunities for the switching of students between the different programs.

This will further the TUD's desire for educational development and create an improved basis for program interaction and collaboration between all of the TUD's departments.

## **FOCUS ON STUDENTS KNOWLEDGE ATTAINMENT**

In order to achieve education based on understanding, students and teaching staff must possess the necessary awareness of the students' desired progression through the different levels of the study program. In the coming period, the TUD will endeavour to give a fuller description of this progression so that restrictive linking to specific courses that hinders students' progress is avoided. The objective is to arrive at clearly formulated expectations regarding the knowledge to have been acquired by students at various levels of the study program.

It is natural for the purpose of the above description of the expected knowledge gain to view the MSc program in three stages: a first stage, where the basic skills and working methods are learned; an intermediate stage, where the full breadth of relevant scientific knowledge is unfolded and basic knowledge is consolidated through application in specific fields, and where students can re-examine their own choices as to areas of study; and a concluding stage, in which specialisation takes place.

A description of the program in terms of the level of knowledge expected at the various stages will concentrate attention more on students' knowledge attainments. This awareness will also promote program coherence and guide students on the expectations regarding their mastery of the subjects at different stages, such as after one-and-a-half, three-and-a-half and five years' study. Expressing well-defined expectations in terms of levels of subject knowledge rather than requirements linked to specific courses will be a tool that will guide students and allow real freedom of choice.

The description of attainments expected at the various stages, or levels, should therefore not relate to specific courses, nor be schematic, but should set out the competence requirements for moving from a lower to a higher level of study. This will necessitate some deliberation, but will be an opportunity to describe and, if necessary, create the requisite interrelations between the components of the educational programs.

Such a development will make it natural to set up interdisciplinary and interdepartmental teaching teams and vest in them the responsibility for part of the educational programs. This will mean that educational planning and realisation in relation to other activities will be transparent, and will provide a natural forum in which teaching methods and student progress can be debated.

Major program components will similarly provide a natural framework for evaluation of the education provided and will be a powerful quality assurance tool. Evaluation must focus on how the course in question furthers the objective of the stage concerned, rather than considering individual courses in isolation. The study programs as a whole and the interplay between its components are of greater importance than the separate parts seen individually.

In addition to the description in three levels as discussed above, the aim is to gather the subjects in larger groups. Effort must be made to reduce the examination syllabus, and we need to abandon the ambition that the whole syllabus must be presented by the teacher to the students. The role of the teaching staff must change, and the teaching must inspire

students to study the subject-matter of their courses in-depth and to determine priorities themselves.

## UNDERSTANDING AS A KEY CONCEPT

Acting on Strategic Plan '98, the TUD will continue to develop and enhance educational quality at all levels. The integration existing between research and development on the one hand and teaching on the other must continue to be strengthened and to be a characteristic of TUD's educational programs. In order to remain one of the leaders in its field, in the coming three year period the TUD will maintain the qualities of its educational programs and apply a determined development effort ensuring its place at the forefront of education in technology. In accordance with the main objective of Strategic Plan '98, the TUD anticipates using the next three years to initiate a paradigm shift both in the educational content and in the way the programs are taught.

University education is characterised by the opportunity given to students to study in-depth, but at the same time it requires that students perform an amount of independent study. University teaching staff can confine their presentation of subject matter to particularly important areas, or areas that are considered difficult, while the rest of the study matter can be assimilated by students independently, with the instructor as their supervisor and discussion partner.

The teaching of both BSc and MSc students must continue to bear distinct marks of taking place at a research establishment where the possibility of involving the teacher's own research or development work is a constant feature of the instruction. The educational programs must be planned so that the study matter overload, which is great today, is lightened. Easing this overload is furthermore one of the prerequisites for effecting the necessary development of the programs.

Progress in the engineering sciences generally must be clearly reflected in the educational programs, which must give students a solid foundation in their field on which further study can be based at any time. The educational basis with which the TUD provides students must thus include both broad and specialised high-level knowledge that ensures familiarity with different areas of their science.

The study programs must train students with the ability to attain command of new subject areas and knowledge rapidly. This requires students to have in-depth understanding of the basic questions that underlie their work in specific subject fields. However, understanding of complex relations requires greater scope for in-depth study.

The TUD's objective is that the programs should be planned so as to give students the opportunity for in-depth study in relevant subject fields jointly with the instructors, on their own, and in study groups. Careful selection and development of teaching concepts and methods must give students scope as part of their subject instruction to train their abilities in a number of essential ancillary skills: communicative, collaborative, linguistic, etc.

Performing the ever more complex tasks that students are faced with makes greater demands in terms of collaborative and communicative skills, if the tasks are to be performed with optimum efficiency. The instruction should therefore be arranged so as to develop these skills optimally in the students. It should be emphasised in this connection that the examination should be seen as an integral part of the learning process and not just as a checking of students' abilities to solve standard problems. The examination should support the prior study effort and instruction in the best way possible. The study effort must not become solely a tool for passing the examination.

The individual program components must therefore be developed to further, in the optimum manner, the TUD's objectives of providing greater scope for in-depth study and enhanced program coherence. As the increased emphasis on understanding requires time for in-depth study, the present semester structure and semester length must be adjusted to accommodate this need, by, for example, giving students the opportunity to acquire independently an overview of a topic through the introduction of a study break.

Compared to many foreign university level establishments, the TUD has a strong tradition of students taking part in and conducting experiments, practical exercises and field studies. This gives the TUD a special strength, which must be continually developed in step with the educational activities generally.

*The Centre for Didactics and Teaching Methods* will play an important interactive role for individual instructors and departments during the whole of the educational process, as it will be able to input new ideas and contribute to the development of new teaching methods, whilst serving as a hub for the development process now being implemented.

In the last part of the study program, the students' knowledge must be raised to a level where they can be described as a specialist proper. This requires scope for dedicated work in a given subject field. The definition of the level of specialisation must be sufficiently dynamic for the programs not to be restricted by ties to specific courses.

The TUD will therefore endeavour in the period covered by the present plan to create a number of

specialisation options in its educational programs that will be defined by subject-matter and themes and will have a volume that provides the necessary potential for progress in the relevant subject field.

Such a development will require that the supervisor and student are jointly active in planning the student's choice of major project so that it belongs naturally under the chosen specialist title. In this way the TUD will approach a tutor system as practised at foreign universities. Such a structure requires students to make well-considered and independent study choices. Achievement in the concluding part of a program must be defined by the progress in the relevant subject field, culminating in completion of the examination project.

## INTERNAL QUALITY IMPROVEMENT AND EDUCATIONAL EVALUATION

At DTU it is considered a vital success criterion that the educational programs and the instruction provided as a part of these programs continually meet a high international standard. In recent years, this has manifested itself as a series of steps taken and objectives published and implemented by the University. These objectives are specified in DTU's strategic plan. The Strategic Plan '98 states the overall guidelines for teaching given at DTU. The guidelines, known as *Thirteen expectations on the quality of instruction*, state that DTU adheres to the following definition of educational quality:

- DTU's organisational structure should inspire and facilitate sustainable development of its educational activities based on close contact with potential employers.
- The scientific content of the instruction should be on an international level.
- DTU should inspire its students to take responsibility for their own progress in knowledge, so that they can continue a life-long learning process in their subsequent professional lives.
- Good teaching work should be recognised and teaching experience and results given due weight when appointments are made.
- The physical facilities, and the administrative routines, should be such that they foster quality development of the instruction and a good study environment.
- DTU should endeavour to attract able new students of both sexes.
- Instruction should be performed and evaluated by teachers and students in a dialogue of equals with respect for the role of each side.

- Departments should follow up on the evaluations. The results of the evaluations should be included in the process of educational quality development.
- Planning and provision of instruction and choice of teaching material should be a joint matter for students and instructors in each department.
- Course planning should respect prior attainments and ensure that the competencies obtained by students can be optimally utilised in subsequent courses where taken.
- Instructors at DTU should show commitment to teaching and interest in the improvement of the communication of knowledge. They should continue to develop their teaching skills, eg by supplementary training, study visits, participation in conferences, and work in development and research.
- The instruction should create optimum conditions for students' personal development.
- The instruction should have the effect of conferring on students both theoretical understanding and the ability to exercise a range of specialist skills [1].

There is a staff-student committee for each of the three basic programs offered by the University (undergraduate, Master's and doctoral), and each committee consists of elected students and tenured faculty members. As elected bodies, the committees are responsible for general educational and subject planning\*. In this connection, DTU has been evaluating all courses offered in the two engineering programs on a semi-annual basis for several years.

Since the autumn of 1998, optically readable questionnaires have been used in DTU's evaluation process. This solution was chosen because of the large number of courses, about 1200, to be evaluated at the end of each semester. Students taking the courses being evaluated receive a three-page questionnaire: the first page asks students to evaluate the content and organisation of the course and the second page the role and teaching skills of the instructor; the third page provides students with an opportunity to express at length their remarks, praise, criticism and suggested changes to content and teaching methods. Since each student takes an average of five courses per semester, DTU's administration receives many thousands of forms to be processed before courses are over at the end of the semester, since the idea is for the instructor and students on each course to have the opportunity to discuss evaluation results.

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\* The staff-student committees for the undergraduate and Master's programs are also supported in their work by a number of advisory committees with technical expertise.

Statistics detailing student response to each course are sent to the relevant instructor, department, staff-student committee and subcommittee. All review the evaluation results and, if the evaluations contain a great deal of criticism, then the head of the department offering the course is contacted and usually also provided with a recommendation of how the content or teaching methods can be changed to improve the quality of the course. The future also holds a plan for a second evaluation system to run parallel with the questionnaires, a system that would provide evaluation across the individual courses of the programs. In Strategy Plan '98, a great deal of importance is attached to engineering programs having a clear progression in what is learned, but also to students receiving training in a number of non-engineering subjects such as communication skills, cross-disciplinary collaboration skills, project management, working environment and environmental subjects. To ensure implementation of these aspects to the extent desired, it is necessary to have an internal evaluation system that looks more at the connections between the individual elements and levels of these educational programs than at the courses themselves.

## ATTRACTING STUDENTS OF BOTH SEXES

Both sexes work with, use and are affected by technology. Today there is a growing awareness that technological development must therefore incorporate the experiences and competencies of both sexes. For example, many modern enterprises are aware of the dangers inherent in cutting themselves off in advance from the competencies of particular sections of the population, and accordingly endeavour to achieve a workforce composition that reflects the composition of the general population. This ought also to apply to university education and research activities.

Therefore, one of TUD's objectives is that its educational programs must at all times be of a sufficiently high quality to attract able students of both sexes. If the TUD, either as a place of study or a workplace, predominantly attracts one of the sexes only, this reduces the population from which students can be drawn, to the detriment both of the University and of society. Increasing demand, both nationally and internationally, for scientific staff and students makes it necessary to remove barriers that may deter many people, especially woman, from starting a career or a course of education in the engineering sciences.

The TUD must therefore uncover the barriers that prevent an increase in the number of able female students and work actively to eliminate those barriers that the University has power to influence.

## CONCLUDING REMARKS

The present Strategic Plan '98 is the beginning of a process. In the period covered by the plan, from now until 2001, the TUD will be carrying through a paradigm shift in the area of its educational programs and instruction, by working in terms of learning rather than teaching. We will bring to completion the process of transformation from a technical college and academy into a university.

Strategic Plan '98 is the expression of a joint effort on the part of the TUD. During the coming year, the process will ensure that everyone at the University feels bound by this undertaking, so that visions and goals take form in specific action.

In the last three years a strategic line of thinking has been introduced (by the Rectorat and supported by the Senate). This can, partly, be regarded as a response to the *situational factors* for the University.

We have in the last few years seen a dramatic fall in student admission. The interest in science and the technical sciences has been decreasing amongst young Danish people. This, combined with the financial system (the *taxameter principle*), has immediate implications for the University budget. The allocation of means from the Ministry has been decreasing. The TUD has chosen to make use of this potential threat from the surroundings to make strategic changes in the organisational structure and the organisational culture.

This shift to strategic leadership has been facilitated by a change in another situational factor. The University Act was changed in 1993 clarifying the role of the elected leaders.

The Rectorat of the TUD has used (in collaboration with the deans and others) these new possibilities. In that way we have been able to respond to demands from society concerning quality and accountability.

## REFERENCES

1. Strategy Plan '98, The Technical University of Denmark. URL: [www.adm.dtu.dk/velkomst/strate98/stra98\\_e.htm](http://www.adm.dtu.dk/velkomst/strate98/stra98_e.htm) (1998).

## BIOGRAPHY



Rector Hans Peter Jensen received his MSc in chemistry from the University of Copenhagen and his doctorate degree from Chalmers University of Technology in Gothenburg, Sweden. He also holds an honorary doctorate from Shenandoah University in Winchester, Virginia, USA.

Through his entire professional career he has been affiliated with the Technical University of Denmark, but has spent several periods as a visiting professor at University of Oregon and at Chalmers University of Technology in Gothenburg, Sweden. His major scientific interest has been polarised light and its use within phase modulation spectroscopy. Since becoming Rector in 1986, he has been more involved in work with science and educational policies. In this connection, he is Chairman of the UNESCO International Committee on Engineering Education and a member of the Higher Education and Research Committee under the Council of Europe. He was a member of the Danish Natural Science Research Council, and in connection with that a member of and chairman for Collaborative Research Grants Program Panel under NATO Scientific Affairs Division. Hans Peter Jensen is furthermore Chairman of the Danish Rectors' Conference, the Nordic University Association, the Fulbright Commission in Denmark, and is serving on a number of national boards as a consequence of his rectorship. He has published more than 50 scientific papers in international journals and participates in the standing national and international debate on educational and research policies.