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Developing a Curriculum for Computer Science

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Preliminary

In a quite short period of time, Information Technology (IT) has become the way and means of communication, of sharing personal, scientific and professional information, and has hence become a reliable instrument to improve teaching and research.

To participate in these changing circumstances, the Iraqi society is in need of highly educated and skilled personnel, experts in the various fields of IT, like network technology, operating systems, software system, and database and information systems. Dedicated educational programs are reliable measures to meet these needs. Taking this into account, the academic structure has to provide the framework and foundations, for example by developing a nation-wide curriculum for Computer Science, by supporting the existing teaching environment and incorporating the lecturers, by providing sufficient and stable IT infrastructure and technology, hence laying out the basis for a sustainable development. If measures are taken to build the foundation, teaching and research can be established on international level, and Master programs as well as PhD programs can be started.

Establishing these structures and outlining teaching and research as central element therein, all measures should take the current and specific needs of the Iraqi society into consideration, account for the national demands, and therefore be oriented at the situation at hand, the historic roots of the nation and its academic background, as well as the current political and economical role of Iraq within the international community.

Bearing this in mind, the central focus and topic of the second IT conference at Technische Universität Berlin (TU Berlin) was to specifically review and assess all these factors that influence and are influenced by teaching, research and applications, to ask how new facilities can be established, study courses can be developed in the field of Computer Sciences and Information Technology, and how curricula should be established. Representatives of 14 different Iraqi universities, as well as international experts and scientists were invited to participate, to discuss the frameworks of study and entrance regulations, societal objectives of the study course Computer Sciences, examination requirements and procedures, general goals and possible methods in teaching, examination regulations and procedures, and rights and duties of lecturers and students.

In light of the overall success of the conference, I would like to especially thank all Iraqi guests for their participation and their lively presentations as well as discussions. Their attendance was crucial to enrich and support the conference.

My cordially thanks also go to Prof. Dr. Wolfgang Huhnt, Vice President of TU Berlin, for opening the conference. As well, I would like to extend my gratitude to the Iraqi Embassy in Berlin, where our project was supported from the beginning, and I would namely like to thank H.E. Ambassador Dr. H. M. Fadhlla Al-Khateeb for his welcoming speech.

Also, my thanks go to the German Foreign Office and the DAAD for their financial support, namely I would like to mention Mr. Klemens Semtner from the Foreign Office and Mr. Alexander Haridi, Head of Section Iraq/Iran, DAAD, for their respective greetings.

I would like to sincerely thank the representatives from the Iraqi universities:

- Dr. Hassan Al-Nasser, University of Technology Baghdad
- Dr. Rana Freed Ghani Al-Tuma, University of Technology Baghdad
- Prof. Noori Mayyah, Al-Qadisiya University
- Assist. Prof. Dr. Amer Almallah, Mustansiriyah University Baghdad
- Prof. Dr. Tawfiq Al-Assadi, Babylon Uni-
versity

- Dr. Ramathan Muttar, Mosul University
- Dr. Hussein Al-Juboori, Tikrit University
- Dr. Kamal Al-Yasiri, Thiqar University
- Mr. Dler Hasan, Salahaddin University Erbil
- Dr. Kadoori, Diyala University
- Dr. Bayez Mohammed, Dohuk University
- Prof. Yahya Al-Mayali, Kufa University
- Dr. Kamran Faraj, Sulaymania University

My thanks also go to the speakers from Germany:

- Prof. Dr. Bernd Mahr, TU Berlin,
- Prof. Dr. Uwe Nestmann, TU Berlin
- Prof. Dr. Jochen Koubeck, University of Bayreuth,
- Mr. Ralph Magnus TU Berlin and
- Mrs. Saskia Steinbeck, TU Berlin

For the overall success, in organizing the conference I would like to give my thanks to the TU Berlin leadership, namely Prof. Hans-Ulrich Heiß. As well, I would like to thank Mrs. Nicola Abbas for translating, and Mrs. Katrin Mahnkopf for documenting the whole conference. Furthermore, I would like to thank the whole team of the Center for international and intercultural Communication (ZitK) for organizing, planning and supporting the conference. Without their interest, their skills and their enthusiasm, this conference would not have been possible.

Dr. Nazir Peroz
Monday, September 27th 2010
Moderation: Prof. Hans-Ulrich Heiß
TU Berlin

Welcome and Opening

Prof. Heiß, Dean of Study of the the Faculty for Computer Science and Electrical Engineering of the TU Berlin and moderator of the first day of the conference, opened the meeting by welcoming all the participants to Berlin.

He mentioned that this was the second conference held at TU Berlin in the context of a cooperation program funded by the German Academic Exchange Service (DAAD) and Germany's Federal Foreign Office. This time, the aim was to discuss and develop proposals for a Curriculum for Computer Sciences in Iraq. After he had wished everyone inspiring talks he admitted the first speaker to the floor.

Prof. Wolfgang Huhnt
Vice President, TU Berlin

Prof. Dr. Huhnt welcomed everyone to the second conference held at TU Berlin. He expressed his honor about the conference being located in Berlin and briefly presented the academic surroundings: in Berlin there are four universities, about ten universities of applied sciences, as well as several research institutes (such as the Fraunhofer Institut oder the Max-Planck-Institut) and further colleges. Also in the outer conurbation area, such as Potsdam/Brandenburg, there are numerous research institutions and universities. With this the region has Europe's largest concentration of scientific institutions.

He also mentioned the national and international network of renowned scientific institutions the TU Berlin is embedded in, as well as the numerous cooperation projects and international students exchange programs it is carrying out. Particularly the ZiiK has long-term experience in realizing projects in the area of IT infrastructure for higher education in developing countries.

Eventually Prof. Huhnt wished all participants power and success for upcoming projects as well as an interesting stay in Berlin, and gave special thanks to the conference committee.
Mr. Klemens Semtner
Federal Foreign Office, Berlin

On behalf of the German Federal Foreign Office, Mr. Semtner welcomed everyone to Berlin. He pointed out that his ministry had contributed to this project indirectly but in a fundamental way by signing a very important document, namely an agreement for academic cooperation in February 2009 in Baghdad. Its long-term aim is to establish a German-Iraqi university, which he hopes to see become reality in the near future. One of the key stones on the way helping to build this up is to establish academic cooperation, and he is happy to see that this initial step led to people coming together and seeking cooperation. Also he was pleased “that there are representatives from 14 different universities all over Iraq from Dohuk in the North to Basra in the South”. He expressed the hope that besides the interaction with the German side the conference would also be an opportunity for the Iraqi participants to exchange ideas between themselves.

Mr. Klemens Semtner

Mr. Semtner briefly mentioned Iraq’s strong academic history with sound scientific institutions that had been suffering during the decades of war, inner turmoil and dictatorship. Iraq had been cut off from the rest of the world for a certain time, and he expressed his confidence that it will only be a question of very short time to reconnected it to the international scientific community – particularly since he sees great potential in the people of this country. He hopes that Germany, as Iraq’s partner, can assist the country in regaining the position it deserves. As closing words he thanked namely Dr. Peroz and Mr. Haridi for organizing this event and hoped that these visions will become reality, because this could serve as a good basis for further cooperation.

H.E. Dr. Al-Khateeb
Ambassador of Iraq in Berlin

His Excellency Dr. Al-Khateeb thanked the TU Berlin, ZiiK, DAAD and the German authorities for making this conference possible. He explained that building a nation depends on the abilities of qualified and experienced people as well as good planning. Since education can be seen as the basis for both in Iraq, and it has suffered a lot in the past years, it is important to mend the damage that was done. With support of the Iraqi government, a lot has already been achieved in reviving high standards of education. As an example he mentioned 10.000 scholarships which have been agreed upon. These are aimed at Iraqi students wanting to go abroad to get a degree. Although up to now many countries started to accept students from Iraq, the country still needs help and support for its students who want to come to Germany.

H.E. Dr. Al-Khateeb
His Excellency Dr. Al-Khateeb went further on explaining that Iraqi professors, scientists and researchers, after years of deprivation of all kind of freedoms, are now receiving their well deserved recognition by the government, and that professors are now doing their best to bring the standard of research and teaching to an accepted international level, which certainly will take years.

In the following he outlined the great importance of computer sciences to his country. Now that Iraq is modernizing its infrastructure, digital tools are being re-introduced to places where they have been introduced in Europe 20 years ago. The country just started to buy PCs for schools, civil servants and other administrative units, which are just getting used to using keyboards instead of paper and pen. With this the country needs help in order to improve and accelerate this process. He underlined the importance of the work of the partnership program and this cooperation for his country and his people, and pointed out that the Iraqi population really is eager to learn. He finished his address by wishing the Iraqi guests a nice time in the city of Berlin and mentioning that he is happy to welcome them in the embassy during their stay.

Mr. Alexander Haridi
Head of Section Iraq, German Academic Exchange Service (DAAD), Bonn

Mr. Haridi started his address by shortly presenting DAAD, the largest international scholarship granting agency, which also provides a platform for academic cooperation between Germany and Iraq.

He mentioned the German consciousness about Iraq's splendid academic past in the 1960s and 70s, up to the early 80s and how this came to an end during an era leading to war, destruction, and (an age of) isolation. He also explained that reconstruction is under work, not only in the field of physical infrastructure, but also with regards to mentality, spirit and organization.

DAAD's involvement with Iraqi students started in 2004, when Bachelor and Master programs have been set up. In 2009, an agreement between the Iraqi and German government has been signed, which gave a boost to the financial cooperation.

As the two pillars of cooperation Mr. Haridi identified (1) a scholarship program which was set up last year and is partly funded by Iraq, partly by Germany (50/50) and offers up to 100 scholarships for Iraqi student wanting to do their Master or PhD. Last year the first intake took place, in the second intake 70 students got accepted, and right now DAAD is preparing for the third intake.

The second pillar (2) is a university network, which is about to be set up. TU Berlin with its project of Creating IT structures for higher education in Iraq is one out of five projects which should pave the way to a German-Iraqi university. The other projects with German and Iraqi universities being involved, are from the fields of mechanical engineering, geology, economics and urban spacial planning.

In the end Mr. Haridi expressed his delight about the broad representation of fourteen universities from the whole country in the current education program for Iraqi IT administrators and that at the same time also the quality of the
participants was assured by the demanding selection process. From his point of view this can only be considered as the start of a fruitful German-Iraqi cooperation.

Before finishing his talk, he shortly presented the DAAD scholarship program. He explained that there is an agreement for an annual scholarship program for Master and PHD programs with an intake of up to 100 scholars. This number has not fully used for the time being, because the entry requirements were only met by 70 applicants. The program is open to all academic disciplines and the funding is evenly distributed among disciplines. For more detailed information concerning the whole application procedure he referred to the website www.tabadul.de

Main Talk: Dr. Hassan Awheed Jeiad Al-Nasser

Head of Software Engineering Branch
Department of Computer Engineering
University of Technology Baghdad

"Social and economic aspects of the study course computer sciences and computer engineering in Iraq"

The main talk of this day was delivered by Dr. Al-Nasser, head of the Software Engineering branch, Department of Computer Engineering, at the University of Technology Baghdad (UoT). UoT is one of the leading universities in Iraq and listed in the ranking of the best universities in the world. He was invited to give an overview of the state of IT development in his country and to explain its asset for Iraqi universities and society. The overview given by him should provide in-depth insight to the social and economic aspect of Computer Sciences in Iraq and hence create the basis for further information and discussion.

Dr. Al-Nasser successively explained the role of three centers of the UoT (University of Technology Baghdad). These centers are of great importance for the dissemination of IT expertise for the Iraqi society and play an important role in the fulfillment of the social and economical tasks and duties of this university:

1. The Computer Center (CC)

The CC was founded in 1975 as a university service center with the following objectives:
- Providing education on a high technical and scientific level,
- Constructing information base systems,
- Making use of scientific and cultural collaborative programs,
- Expanding the use of the Internet within the society.

The topics of the offered courses can be grouped in "Programming Languages", "Software Applications" (e.g. Office, AutoCAD, Photoshop), "Computer Maintenance", elementary "Computer Networking" and elementary "Web Design".

The center is offering an "International Computer Driving License", a certificate to officially prove certain expertise in the area of computer literacy.

2. The Information and Communication Technology Center (ICTC)

Established in 2008, its main objective is creating IT infrastructure inside and outside of UoT through founding information systems, e.g. E-Learning and E-government, and quali-
fying and developing the specialist technical staff. The ICTC realizes socially and economically relevant measures like providing Internet access, organizing IT workshops, trainings and student competitions. For the latter, students are encouraged to contribute ideas and other activities in the area of IT.

3. The Cisco Networking Academy

This center has the objective to qualify participants of high-level training courses about computer networking. Certificates are qualifying for academical and practical fields of endeavor. The number of courses and participants has grown rapidly during the past few years.

All three centers are suffering from the poor security situation in Baghdad, lack of resources and of certain weaknesses and – compared to international standards – a relatively low standard of many of the courses. Currently the scientific staff is being educated to improve this situation, but it will need some more time until the situation will improve and tangible results can be seen in this area.

Also, technical constraints related to IT-solutions exist. Dr. Al-Nasser singled out some of those, that the Iraqi society has to deal and cope with:

- lack of effective computer networks, WAN as a example,
- lack of easy to access and affordable Internet access,
- establishing the E-government and other E-services.
- professional Training in the related fields.

Courses about Internet usage show a relatively weak demand, whereas courses about software applications in general are quite popular, as figure 1 in the annex shows. Dr. Al-Nasser draws the conclusion, that this is due to the fact that the major part of educated people has already sufficient knowledge about the use of the Internet and a very good orientation towards modern sciences.

Services like E-Government and other E-services, which are already available in many other countries, are to be established soon in Iraq, too. Essential for their implementation are professional planning, training and a sufficient IT infrastructure.

Therefore, the Iraqi universities and technical institutions are seeking for collaboration and cooperation with German universities, to

- enhance and rearrange the IT infrastructure,
- use knowledge from German experts for strategic planning in IT-oriented fields,
- professionally train the trainers,
- increase the number of scholarships at German universities.

In the discussion following Dr. Al-Nasseris talk someone from the audience commented that in Iraq there is an interest for Internet applications, but also a very bad service and infrastructure. Cables and networks are in bad shape and providers charge high costs for their services. The question was raised how to cope with these handicaps, since cables and reliable networks are a prerequisite for Internet access. The question how the whole country could get access to the Internet could not be clearly answered. One participant noted, that there are already cables in the soil, but that they are disconnected from outside. Furthermore a cooperation project with getting Internet access via Turkey was mentioned.

Prof. Heiß brought up the question if there was any government tool or aspiration to get all universities nationwide connected, which was clearly negated. In the scope of the discussion it was also made clear that in the courses mentioned in Dr. Al-Nasseris's presentation no academic titles are rewarded, but that there are courses that lead to certificates. Someone suggested that the problem with the scarce Internet access is rather a political than a technical one. Another participant expressed the hope, that with the new government all these issues will be addressed soon. To a question concerning the Internet access on university campuses, Dr. Al-Nasser explained that at UoT there is
cost-free Internet access, but that the problem rather is a societal one: e.g. due to the security condition, there are problems with students bringing their own laptops to the campus and mobile phones with cameras are often not allowed in order to protect the privacy of female students. In Mosul there is the problem that the Internet is partly abused for religious propaganda, this is why they support some kind of censorship. At the three universities in Kurdistan, on the other side, there are no restrictions, students are allowed to bring laptops and mobile phones on campus. To close the discussion Prof. Heiß summarized that the situation is diverse throughout Iraq, but that all universities want to provide Internet services for their students, at least for academic purposes.

Prof. Bernd Mahr

Faculty of Electrical Engineering and Computer Science, TU Berlin

"Strategic prerequisites to develop a curriculum"

Prof. Mahr started his lecture by giving some general information on his person, his background and his experience in curriculum development, which he gained not only by evaluating and developing study courses and curricula at TU Berlin, but also by consulting higher education authorities outside Europe, e.g. in Afghanistan or Syria. He stressed that even though Iraq is in need of foreign help, he is not trying to organize or improve university education there on the spot. According to him, the conference could rather function as an opportunity to develop a free exchange of thoughts, on a subject both sides still have to learn about and of deepening “our cooperation in establishing sustainable structures in university education” as well as a contribution to peace after long periods of instability in Iraq. As requirements for the development of a Computer Sciences curriculum Prof. Mahr identified factors such as the availability of the appropriate resources, funds and capacities.

Of decisive importance for the successful creation of study programs are precise objectives about the development of the university education. These have to be formulated by the Iraqi state authorities and then "constantly advocated, both inside and outside Iraq".

At first, the focus should be on providing qualified teaching and education, only later to be joined by the development of research capacities, as they are more complex and much more dependent on reliable and decentralized university structures. He illustrated that the establishment of new study programs depends on the acceptance of those who participate in it. This has to be reflected especially when implementing new curricula in existing departments and institutes.

He is convinced that guidelines and regulations have to be created and enforced by the responsible bodies of the Iraqi government. They apply to:

- Societal objectives of university education in Iraq
- Requirements and procedures for enrollment
- General goals and types of teaching
- Requirements and procedures for examinations
- Rights and duties of the faculty and of students
- Documentation and reports on the development of study programs
Based on these regulations, which are the formal foundation of any study course, study regulations need to be designed by the department or faculty and approved by the university. They must fulfill the following regulations:

- they must be compatible with the university's guidelines and regulations;
- the departmental or institutional organization of the curriculum and the regulation of studies and teaching must be based on the general educational and developmental goals of the department, of the university and the authorities responsible for the university infrastructure and education;
- they must be geared to the resources available.

Prof. Mahr continued with explaining that for the development of the curriculum, it is necessary to take the current situation of each department in all of its aspects into account. Even more, a development plan for the curriculum and the study program needs to be articulated. This will enable occurring changes in the overall academic environment and the society to be reflected and introduced to a curriculum in the course of time.

Accordingly, he concluded that the development of new curricula for Iraq is not a single, one-time task – it can only be successful when understood and handled as a process that is part of the development of university education in general.

Subsequently, he provided a template for the description of curricula, which is not limited to Computer Science studies, but for other study programs as well. It has to include the Program of Study, the degree in which the study program terminates, the name of the university offering the study program, the division, department or institute hosting the study program, the period in which the study program has been approved by the university and the authorities, the national and international partners actively supporting the study program and a summary.

In the following, Prof. Mahr outlined a number of items to be included in the curriculum:

- General Objectives of the Study Program, which include Iraq's educational needs in the short-, middle-, and long-term, career training and qualifications.
- Admission Requirements for the Study Program, which include formal requirements and the expected qualifications (specific academic level expected of students).
- Educational Requirements outside the Major Field, which consists of international communication (means and scope in which students are to be trained using the Internet and other media), foreign languages, planning and management, understanding for cultural and social developments in the world (teaching past and present societies, schools of thought and cultural developments) and religious studies.
- Major Field Requirements (the "ideal" study plan), consisting of specifying major and elective subjects and the structure of studies (teachers, credits, contents, reading lists, max. number of participants etc.)
- Curricular Development of the Study Program, including objectives and time schedule for developing the study program, development planning for the structure of studies and the courses, planning resources and measures for developing the study program (i.e. human, financial and material resources), national and international cooperation in developing the study program.

In addition to this, Prof. Mahr listed the particular contents of the Computer Science study program as they are effective on an international scale. These are more and more to be seen as job market qualifications – a growing need for qualified workers and experts in this area is currently emerging. According to him, the qualifications in Computer Science can be grouped into five middle- and long-term areas of career, which exist in all technologically developed nations and are well-established at universities throughout the world:
• Computer Science
• Computer Engineering
• Information Management and Business Administration
• Systems Adminstrating and Maintenance
• Teaching in Education and Training

The first three of these areas typically provide opportunities in research and development. Therefore, consecutive Master and PhD programs have to be created later on. The last two areas he recommended to terminate with the Bachelor's degree.

As a conclusion, Prof. Mahr again stressed the importance and responsibility of a successful realization of Computer Science study courses, as Information Technology is a so-called "enabling technology", fostering many other areas. A national university educational program for Iraq should be launched to reflect changes and handle uncertainties and financial limitations while also preventing poor planning. If these aspects will be considered, fruitful relations to foreign cooperation can be established.

In the discussion following his talk one participant asked which major factors need to be taken into consideration for the development of a curriculum. According to Prof. Mahr this very much depends on where exactly you realize it and what the current situation is like, and also need to consider the job market and the required skills. Another auditor wondered what the Iraqi students are taught here in Germany and whether the labor market in Iraq played a role. Prof. Mahr pointed out that he had not studied the Iraqi labor market and that this needs to be done by Iraqis, in order not to keep the dependency. Since there was disagreement about that point, Prof. Mahr once more seized on Prof. Heiß' statement that the pure implementation of “the Stanford curriculum” would not work but that it also wouldn't be sufficient for higher education development to figure out what Iraq actually needs and then put this in a curriculum. He added that maybe the country has no choice at the moment, but one needs to be aware that this cannot be the end. Help from outside can only teach how to analyze, not what to analyze, only methodology and supervision can be done by foreign help.

Another participant raised the questions about which structure of studies should be preferred. Prof. Mahr answered that he is in favor of semesters, since there is more time to go into a single subject, but trimesters are also possible. Furthermore it was asked when those curricula would expire, which would be, according to Prof. Mahr, after between 5-15 years.

Mr. Tippmann wanted to know what exactly the difference between a syllabus and a curriculum is. Therefore Prof. Mahr explained that in a curriculum you implement the study program, it's the whole thing offered by a university and a syllabus is what is covered by a single course. He stressed that it is not possible to implement a study program by a syllabus, that's not enough, there are important parts in between.

Mr. Polla addressed the question of how many and which textbooks should be used and integrated to a syllabus. Prof. Mahrs recommendation was to use one basic textbook, but to recommend other textbooks, so that the students have different sources. He also stressed that neither the government nor the university should decide which textbook to use, but the teacher, and that the books should always be up-to-date.

Also the question of examinations was briefly discussed, and it was suggested that there should be final exams as well as regular assignments as well, to account for students with exam fears.

Finally Prof. Mahr encouraged the establishment of a “curriculum partnership”, so that the respective people in Iraq could rely on a network of friends and colleagues in Germany and identified this as the aim of the conference.
Tuesday, September 28th 2010

Moderation: Mr. Daniel Tippmann
ZiiK, TU Berlin

Mr. Tippmann welcomed all guests to the second day of the conference and introduced the topic of this day. During the following four sessions, the guests from Iraq would present facts about different aspects of the current situation at Iraqi universities in the area of Computer Science study courses.

Overview: Current situation of the structure and content of the course of study „Computer Science“

Dr. Rana Freed Ghani Al-Tuma
Head of Information System Branch
Department of Computer Science
University of Technology Baghdad

Dr. Al-Tuma outlined that the aim of her lecture is to show the situation and structure of curricula in Iraq, but since she can not cover the whole country, she uses the University of Technology Baghdad (UoT) as an example.

She started her presentation by giving some background information on UoT. It is one of the leading universities in Iraq and listed in the ranking of the best universities in the world. It consists of 14 departments, which are categorized into either Engineering or Scientific.

The education system at the UoT consists of two semesters, as she continued to explain. Faculties at UoT use the following system to grade student course assessments: 15% for the first term theoretical assessment, 10% for the first term practical assessment, 10% for the second term theoretical assessment, 10% for the second term practical assessment, 5% for the attendance and 50% for the theoretical final assessment.

The UoT has two computer related departments, which were both presented by Dr. Al-Tuma; (1) the Computer Science Department and (2) the Computer and Information Technology Engineering Department.

1. Computer Science Department

The Computer Science Department was established in 1983 in order to prepare students to become specialist in the field of computer and to cover the country's need of of employers and researchers in this field. It grants BSc, MSc and PhD degrees in Computer Sciences. In the following Dr. Al-Tuma listed the different branches of the Computer Science Faculty, namely:

Mr. Daniel Tippmann

Dr. Rana Freed Ghana Al-Tuma
• Software
• Information Systems
• Artificial Intelligence
• Computer Security

Each of these branches contain general as well as special courses, which she illustrated with the help of all four areas mentioned above. On the basis of Information System Branch courses Prof. Al-Tuma exemplified how the undergraduate, postgraduate and PhD courses are organized and structured at UoT in more detail.

The undergraduate program consists of four stages with a sum of 80 units per semester to be taken. The structure is not chosen randomly, but consecutively, as can be seen on figure 2 in the annex.

Further Dr. Al-Tuma explained that the MSc, as well as PhD study courses in the field of Information System require two courses of theoretical study and one year/resp. 2 years for the thesis.

2. Department of Computers and Information Technology Engineering

She went on giving some further information on the Department of Computers and Information Technology Engineering, which was established in 1997 to keep pace with the rapid developments in the areas of information technology and computer industries. The Department excepts graduate students to be a base for high-level specialist in Computer and Information technology engineering.

The Department includes two branches: (1) the Software Engineering Branch and (2) the Information Technology Branch; in both specialization begins at the third year of study.

The last part of Dr. Al-Tuma's presentation comprised a comparison between the study plan for Computer Sciences at TU Berlin (which she shortly presented) and UoT. She figured out how many units have to be taken altogether, and, by comparing the subjects, could show up that most of the courses taught at TU Berlin do have an equivalent course at UoT (see figure 3 in the annex).

Before coming to an end Dr. Al-Tuma concluded that the curriculum of Computer Sciences at Iraqi universities is required to be reviewed to reflect the requirements of Iraqi society and work sectors in addition to the requirements of the computer study. Also learning environment, staff and resources available need to be taken into consideration.

She said that she was looking forward to further collaboration between German and Iraqi universities in order to review and improve the curriculum of Computer Science at Iraqi universities and to the establishment of training courses and conferences to transfer experience in this field of planning and to design a curriculum for Iraqi staff.

In the subsequent discussion it was noted that the workload of 80 units teaching per semester might be too much, considering that the students also need time for preparation. A discussion began about whether this is true or not. It was further observed that the comparison made between the UoT and TU Berlin may not be a fair one, since the teachers in Iraq often have a different background than a pure Computer Science one and it is not comparable. Dr. Al-Tuma also made clear that professors and assistant professors at her school usually hold an PhD, whereas lecturers hold an MSc.

Mr. Tippmann brought the discussion to an end by referring to the available time for discussions after each of the individual topic blocks.

Prof. Noori Mayyahi
President
Al-Qadisiya University

Prof. Mayyahi centered his talk on the curriculum of the first study phase of the study course Computer Sciences. He explained that Iraqi universities only have limited possibilities changing the curriculum, because there is a central board for Computer and IT for all institutions and the universities themselves regulate only about 20%. This applies to all univer-
sities in Iraq apart from the Kurdish institutions, about which Prof. Mayyahi has no information. He classified curricula for Computer Sciences into three categories:

1. An annual system which is applied at most of Iraqi universities
2. A semester system which applied at the computer faculties in Thiqar and Babylon
3. A credit point system, which is most common worldwide but at the moment only used at Computer Sciences Departments of Basrah, Al-Qadisiya and Kufa and is considered as the best one by Prof. Mayyahi.

All in all there are 30 weeks of lectures per year, divided into two blocks with a break in between. In the third year there are compulsory optional subjects offered (two subjects out of four areas), however the subjects are decided on centrally, from the central board. In the forth year four compulsory optional subjects are offered.

The semester system (2) is, according to Prof. Mayyahi, organized better than the annual one. It is divided into eight semesters, which means that it is easier to offer more compulsory optional subjects. The amount of units that need to be taken has been slightly lowered, so that the workload isn't as high as in system (1).

Prof Mayyahi advocated the credit point system (3), not only as a representative of his university but also as a member in the central board of deans fixing the curricula. This is applied in Basrah since the 1970ies, and also in Al-Qadisiya and Kufa at the faculty of Mathematics and Computer Sciences. The amount of units to be taken have been reduced and can vary from faculty to faculty. This system means increased flexibility for the student, since he/she can make up own subject groups. Thus, the student doesn't necessarily need to study for four years.

The workload is divided into three organizational areas: the general education, subjects like human rights etc., courses in other fields of the faculty (e.g. mathematics) and from the actual course of study within the Department (compulsory subjects as well as compulsory optional subjects).

After his presentation several issues were discussed. Firstly Dr. Muttar stressed the diversity within Iraq itself and raised the question if the Iraqi system is really comparable to other systems.

Another participant noted that the credit point system is relatively new. Even though it has existed in Basrah quite long now, usually it is to be found at the newest universities within the country. He hinted that Prof. Mayyahi
might be biased. He defended himself by referring to the international standard: this system is used in most of the countries worldwide, not only the industrialized, but also in threshold countries. He sees himself as an advocate for all universities, the advantage of the credit point system is e.g. the comparability of study courses. It became obvious by a fervent discussion that, as Mr. Tippmann also interjected, often no agreement is found concerning curricula development. Prof. Al-Assadi noted that he had worked as a teacher as well as in the administration and that this system also relies on a capable administration. According to him some courses are difficult to teach within 15 weeks, one needs experienced teaching staff for that. It became clear that the introduction of a new system depends on various parameters and that administration-wise the annual system is the easiest one.

Also Prof. Mayyahi explained the exact tasks of the central board for Computer and IT mentioned above: it is the final decision-making body and deans of Computer Sciences faculties are represented there. Changes are decided bottom-up: in the faculty council, the university council and then the central board. The discussion came to an end after Mr. Tippmann had urged everyone to postpone it to the discussion on the last day of the conference.

**Overview: Entrance requirements and admission procedure**

**Assist. Prof. Dr. Amer Almallah**  
**Deputy Dean, Science College**  
**Mustansiriyah University**

In the first presentation of the field “Entrance requirements and admission procedure Prof. Almallah considered some fundamental issues concerning admission. He explained that admission is organized centrally, by the Ministry of Higher Education and Scientific Research (MOHESR), which circulates the information concerning who is going to study where to the universities. Also the admission to Computer Sciences is dealt with centrally, not by the universities themselves. The decision about admission is primarily based upon two elements: the final grade of the final school leaving examinations and the options indicated by the applicants concerning where and what they would like to study (students have the option to make a selection).

Prof. Amer Almallah

The core of his talk focused on the duties students have on campus, and what consequences their behavior has: inside university as well as prosecution.

Prof. Almallah explained, students are obliged to obey to the following rules:

1. They have to stick to the internal rules of the university.
2. They are not supposed to disapprove of religious convictions or the national unity or the national consciousness; they are not supposed to deliberately evoke confessional or ethnic separation.
3. They are not supposed to damage the reputation of the MOHESR in words or deeds, within or outside of the university.
4. Students should avoid everything which contradicts the code of conduct; there are high disciplinary standards: esteem and respect for teaching and administrative staff and attention to good relations and cooperative collaboration between the students themselves.
5. Exemplary behavior: particularly when the student receives a research grant, a job within the university or is sent abroad with a delegation.
6. Students are supposed to avoid all activities disturbing the law and order, not to participate at such activities or backing people doing so.
7. They have to handle all the universities' papers and properties with care.
8. The students must not perturb the regular course of the study.
9. They should stick to the uniform, which is specific for their university.
10. Students must abstain from the call for the establishment of organizations promoting social cleavages and to avoid any form of political discrimination.
11. The students must not engage in any kind of propaganda for a political, confessional or ethnic party or group (hanging up poster, organizing meetings).
12. They should not encourage any political figures to hold a political or religious lecture, in order to conserve the national unity.

In the following Prof. Almallah briefly summarized the remaining articles in order to save time. He mentioned that there is a body of articles defining what kind of fines and punishments exist for non-compliance with the above mentioned rules. Those punishments can range from warnings to admonishments and students can also be expelled from university – between 30 days until up to a year, or even completely. He subsumed that there are different gradations of punishment and that severe breach of the rules can even lead to criminal prosecution. He also offered to give further information on this later, people should just address him if they are interested in this issue.

After the speech Dr. Al-Robayie brought up the issue of potential problems connected to point 3. He did not comply with this item, since there is the problem that it can lead to students being intimidated and muzzled. Prof. Almallah responded that this point had been laid down by the MOHESR, to avoid libel against the ministry, but that constructive criticism is always welcomed. A lively discussion started about where to draw the line between constructive and destructive criticism.

Before the start of the next presentation one participant wanted to know how this presentation did fit into the thematic block of “entrance requirements and admission procedures”. Prof. Almallah answered this question by referring to the admission requirements of the universities: in order to enroll, students need to agree with the regulations mentioned above which are updated from year to year.

**Dr. Tawfiq Al-Assadi**
**Dean of Computer Technology College**
**Babylon University**

Dr. Al-Assadi started his speech by referring to the issue of damaging the reputation of the MOHESR, which the audience discussed after the previous presentation and added that those regulations (central study compendium) are handed out to all students, but not all of them read it. Some universities advertise the regulations on notice boards within the universities but, according to his experience at his university, students violate those regulations only in very rare cases.

In his talk Dr. Tawfiq Al-Assadi focused on the basic acceptance conditions to Iraqi universities. The main regulations are the following:
1. Applicants need to have Iraqi citizenship. Also non-Iraqi citizens are allowed to study at Iraqi universities and many already completed their studies at Iraqi universities, but for them special regulations apply. Within this presentation, only the regulations for the Iraqis will be presented.

2. Applicants need to show their secondary school certificate.

3. They need to pass a medical test: this always depends on the subjects students want to study. Also handicapped persons, such as the blind, can be accepted, but they need to turn to a special commission within the university.

4. The applicants’ secondary school certificate must have been obtained in the same year or the year prior to the application. He/she mustn’t have been accepted to any other Iraqi faculty or institute in Iraq in the past.

5. Full-time studies are required: The applicants need to be completely free for their studies, there is no possibility to combine their studies with work.

6. The acceptance depends on the competition with other students (particularly the comparison of grades).

He explained that there are more points to be fulfilled, but stated that he will stop here to leave some things to say to his colleagues, to avoid overlapping.

Subsequently he illustrated some important common prerequisites for admission, such as:

1. The selection is made according to the priorities chosen by the applicants. On the form that needs to be filled in for application the applicant can indicate 50 priorities/options to chose
2. For each part the candidate passed in the 2nd round of the final exam, 5 points will be deducted, up to 15 altogether in the final result.
3. When allocating the last places for a subject again the applicants' choice is taken into consideration.

4. Furthermore the knowledge of foreign languages is taken into account (English).

5. The applicant needs to indicate at least 50 priorities, 30 for faculties and 20 for institutes.

6. There are regulations for the change-over from one faculty with a lower numeros clausus to another faculty with a higher one, as Prof. Al-Assadi explained with the help of some examples; it is also regulated what to do if a student wishes to study quicker or to skip one year or stage of his studies.

After an applicant is accepted to a certain university he has two weeks to enroll. For enrollment he needs the following documents:

1. Documents of secondary school containing the grades in the examinations and information about which material he/she passed to the second trail,
2. A certified copy of his/her ID,
3. Three new photographs,
4. Documentation of his/her medical test.

He closed his talk by referring to two copies of the above-mentioned students' manual, which he brought along and which can be viewed by the audience.

Following this presentation it became clear that there are variations within Iraq: for instance point two, prerequisites for admission, there are faculties where points are added in the second round.

Dr. Thafer Ramathan Muttar
Dean of College of Computer Science and Mathematics, Mosul University

Dr. Muttar's talk started with the presentation of the two phases of the formal enrollment procedure. First, applications have to be filed to the Ministry of Higher Education and Scientific Research. The Ministry then chooses the candidates and respectively grants admission. The actual enrollment is then organized at the university and its faculties and departments. Dr. Muttar stated that with this process,
several problems are arising due to the fact that the number of admissions is in fact regulated for each faculty but that the Ministry keeps passing different numbers. These numbers may vary from the number that has been calculated by the faculty. Also, there are additional ways for students to enroll and to bypass the limit of applicants, but these numbers are not known in advance.

Dr. Muttar explained that the problems increase as it happens sometimes that the faculty decides how many students can actually enroll, and later on more students would be assigned. Also, as he continued, shares differ from year to year among the fields of study the candidates wish to enroll in (e.g. less mathematics, more Computer Science students). To cope with these circumstances, a high amount of flexibility is needed at the faculty.

About the formal application procedure, he explained that the application forms consist of sheets for personal data, previous education and a sheet for placing stickers -there exists a special coding systems for study courses- with the desired study courses or universities. Meanwhile, this procedure can also be accomplished on the website of the Ministry. After the announcement of the application results, applicants are entitled to file a protest (if there are tangible reasons). This phase is ending officially with the publishing of the results by the Ministry.

He then continued giving a brief overview of the current situation of the equipment at the faculty. Since the 1980s, a logics lab existed at the faculty which had been funded by West-Germany, as he stated. Unfortunately, this lab had been destroyed and plundered in 2003 but could be replaced to some part by devices which had been manufactured on location in Mosul. Also, a Cisco lab has been created since with a modern infrastructure (servers, switches, workstations, professional cabling etc.). Because of problems with the power supply (blackouts etc.), it is considered by the university to move some of the servers to Canada, as he explained. For the support for this and other facilities Dr. Muttar expressed his sincere thanks to all the supporters.

Dr. Hussein Ali Saeed Thallab Al-Jubori
Dean of Faculty of Computer Science and Mathematics, Tikrit University

Before starting his actual presentation Dr. Al-Jubori wanted to pick up his colleague's point by adding that there are a lot of similarities concerning the admission to different Iraqi universities. He continued making some general points concerning the procedure of application for admission.

After the announcement of the results of the secondary school certificate the applicants need to turn to their nearest Center for Application and Counseling in order to receive an application form and a study manual. Dr. Al-Ju-
bitori added that in Iraqi schools, language or science education exists. There are two different kinds of application forms, depending on which branch the applicant completed. Future students who obtained their school leaving certificate outside Iraq have the option to make use of an equivalence test in order to have their certificates acknowledged.

Regular applicants would fill in their application forms, then the forms are checked by the school administration, and then submitted to the Center for Application and Counseling at the university. The center collects all the forms, checks them, and passes them on to the central admission office at the MOHESR. There the data is fed into the computer. After a certain period of time, on average about two weeks, the results are published. Subsequently the lists of results are forwarded to the respective faculties, which then distribute the students to the respective departments, according to their grades and chosen options. After this the student needs to enroll and take up his/her studies within a certain period of time.

Dr. Al-Jubori added that all applicants get a receipt when handing in their application form and with this have the option to file opposition in case their name does not appear on the list. Moreover he elaborated on the basic principles upon which admission is taking place. He did this rather shortly, since other presentations had already covered this issue. Partly admission is based upon the priority list handed in by the applicants.

As already mentioned the applicants can make 50 specifications: 30 for faculties and 20 for institutes. Usually you need to study four years at an university/faculty and two years at institutes. However, there are different prerequisites, depending on the field of study and department. For instance if you want to study medicine you need to obtain at least 88% out of a maximum of 100 points in your secondary school certificate, for engineering you need 75%, for further sciences, such as Computer Sciences you need 70% and for all other subjects at least 60%. However, these average numbers vary from year to year.

The system described by Dr. Al-Jubori applies to almost all universities with day study programs in Iraq. However, there are some departments in which admission is not carried out centrally, but where prospective students can apply directly. These are, for instance, the departments of:

- Sports Sciences
- Islamic Studies and Islamic Law
- Fine Arts
- Kurdish and Assyrian language, if applicable

Should a student be admitted to one of those departments, he/she forfeits his/her right to apply via the central procedure as mentioned above.

There are two possibilities to study at Iraqi universities: either a regular day study program (classes take place between 08.00 and 15.00) or an evening study-program (classes take place between 14.00-17.00/18.00). Concerning the evening study program there are different regulations at different universities. Students need to apply directly to the department, and need to pay a fee for the application. The required overall average grade also varies, but concerning examinations, units that need to be studied, syllabus and teachers, the same regulations and rules as for the day study program apply.

He concluded his presentation with shortly mentioning the existence of private universities, which are accredited by MOHESR but finance themselves. They define their own rules, and fix all further requirements themselves (such as the fee students have to pay, the overall average grade for admission, the number of places). However, all in all they are also subject to the Ministry's supervision, concerning syllabus and the amount of credit points to be achieved.

After this presentation Mr. Tippmann immediately admitted the next speaker to the floor,
since the conference was already behind schedule.

**Dr. Jaleel Ibrahim Kadoori Al-Robayie**
*Diayla University*

Dr. Al-Robayie from Diyala University made clear that his contribution today would be about "entrance requirements and admission procedure" and not “examination requirements and procedure”, as originally planned.

Since most of the points regarding admission had already been mentioned in previous presentations, Dr. Al-Robayie announced that he would only very briefly add a few points. He shortly referred to the Iraqi school system which he regarded as relevant since it prepares students for their later academic career and for university. He illustrated that school education consists of six years of primary school and six years of secondary school. Secondary school is divided into two stages:

- three years of intermediate school,
- three years of high school, which prepares students for their university entrance certificate, their secondary school certificate

In the following he gave some further information concerning basic principles of admission:

- No student is admitted to any college in Iraq before passing the Baccalaureate Examination/the secondary school certificates, held by the Ministry of Education.

- Concerning the range of results: the highest obtainable mark is 100%, the lowest mark that needs to obtained in order to pass is 50%.

As far as entrance requirements and the admission procedure is concerned he mentioned the following points:

1. As some of his colleagues had already mentioned, Dr. Al-Robayie once more stressed that only those graduates of secondary schools, which took the scientific branch in school have the right to apply for scientific courses of studies, as Computer Sciences and IT. Also they need to have obtained at least 85% (however this number varies from year to year).

2. Students are admitted to the Computer Engineering Department on the basis of their Baccalaureate Examination Mark and on the wishes they have indicated

In case of equality of marks, student with higher marks in Physics and Mathematics are preferred.

Since most of the points Dr. Al-Robayie wanted to mention had already been dealt with in previous talks, he decided to abbreviate his presentation, and thus finished by thanking Dr. Peroz and the ZiiK for the outstanding organization. He concluded his speech saying that “all beginnings are difficult, but I hope we will achieve our objections through this conference”.

**Overview: Examination requirements and procedures**

**Dr. Kamal Yasir Al-Yasiri**
*Dean of the College of Computer Science Thiqar University*

First, Dr. Al-Yasiri explained, that his presentation will give an overview of the examination system at his university and covers two parts,
the examination procedures and the examination requirements.

About the examination procedures he stated, that this system involves a hierarchy of two levels of examination committees: central examination committees and examination sub-committees. The former ones are typically headed by the dean of the college and have the heads of the departments as members. Its duty focuses on:

- Monitoring the duty of the examination sub-committees
- Supervising the process of the examination
- Ensuring that the requirements of the examination are met and
- Making major decisions regarding the examination procedure.

Examination sub-committees, as he continued, are concerned with a department's examination procedure. It involves eight members who are usually chosen by the head of the department. For each stage of the examinations, groups of two members of the committee are responsible for the administration, supervision and monitoring. He then explained that the tasks of the committee include:

- Issuing a list of students who are participating in the examination.
- Issuing a timetable for the examinations.
- Preparing the examination halls and distributing students among them.
- Issuing a timetable for the invigilation in accordance with the examination halls and the availability of staff members. The ratio for this is one staff member for 25 students.
- Preparing the sub-master sheets for the marks for each subject and asking the teachers to handle coursework marks before the final examinations.
- Stamping the examination papers which are provided by the central committee with the name of the respective department's examination committee. Keeping the 1st as well as the 2nd attempt questions in a safe at the department until the examination takes place.
- Supervising the process of the examinations.
- Regularly report to the head of the central committee (the dean of the college) about the examination procedure.
- Collecting the examination papers from the supervisors, marking them with confidential numbers and making them anonymous to ensure objectivity.
- Receiving the examination papers after marking by the teachers, checking and calculating the marks on and inside the examination papers.
- Reassigning the confidential numbers examination papers and calculating the final mark.
- Discussing the results of the final examinations.
- Presenting the results of the examinations by the head of the sub-committee to the dean of the college and the university chancellor for approval.
- Announcing and distributing the results of the examination among the students.

About the examination requirements, Dr. Al-Yasiri explained that the college follows the term system in the study and examination procedure. Each term lasts for 15 weeks, during which the student takes two examinations for
each subject. The marks of the two examinations form the coursework mark and count 50%. The final examination mark also counts 50% of the final grade. The minimum mark for passing the exam is 50%.

He continued to explain that the student who gets less than 50% in more than half of the subjects will fail the course. Candidates who fail in half or less than half of the subjects are allowed to participate in a 2nd attempt of the final examinations, which is considered as the last chance for the student, as he closed.

From the audience came the remark that for certain subjects the calculation ratio is 60-65% for the coursework mark and the 35%-40% for the final examination mark.

**Mr. Dler Salih Hasan**  
**Head of Department of Computer Sciences, Salahaddin University Erbil**

Mr. Hasan opened his presentation highlighting the importance of examination requirements for students, teachers and the institution and announced that his presentation would focus on the examination instructions from the Ministry of Higher Education in the KRG (Kurdistan Regional Government) in 2008.

He explained that the college council decides on the number and types of exams after the proposal submitted by the department council. He identified the goals of the questions of the examinations as (1) to examine the student's ability to think and to analyze the curriculum and to (2) evaluate the ability of the student to use the knowledge and skills acquired and to present them in an organized way. The questions themselves should include various assessment types, they should be clear and specific, not too descriptive, but also contain comparison, linkage and objective questions, and there should be sufficient time for answering them.

Moreover, Mr. Hasan highlighted the tasks of the examination committee, which is established by the college council with the dean's suggestion and is one of the most sensitive organs of a university. Its main tasks are to:

1. Contact the examiner of each subject in order to take question papers from him/her a couple of days before the examination begins and keep it in safe custody until the day of the exam.
2. Create the schedule for the examination, prepare halls and distribute students in the halls.
3. Number the exam papers with a secure number and cut off the names.
4. Check the paper exam marks and add the course exams to find the total marks for each subject.

He furthermore explained that the academic year is divided into two semesters, each about 15 weeks long. Most of the colleges using this system have classes from end September to mid-June, with a break in December and a major break in March.

The average mark of students is calculated on the basis of the obtained marks, taking into account the number units of each subject. The unit is one weekly theoretical hour for total 15 weeks. Two or three practical hours are equivalent to one theoretical hour. The calculation of the student's rank is demonstrated in figure 4 in the annex.

Mr. Hasan further explained that examinations consist of two parts, the continuous in-class assessment during the first and second terms.
and final examinations that consists of three hours written examinations, practical and oral examinations.

The assessment can be divided into two categories. Firstly, theoretical subjects only, in which the total mark consists of 60% written oral exam and 40% course exam and secondly subjects which consist of theory and practical work in which the mark consists of the final exam 60% (40% written + 20% practical), 27% theoretical and 13% Lab.

He briefly explained that a student fails in an Academic Year if he/she fails in more than one subject. If he/she fails only one subject there is the chance to do a retit and still pass on to the next stage.

He also mentioned the Iraqi grading system, which can be found in figure 5 in the annex. He briefly addressed the duration of exams (3 hours for theoretical ones, 1.5 hours for practical ones). Furthermore Mr. Hasan outlined a quality assurance system, which is applied in KRG universities this year. It consists of a feedback form which needs to filled out by students, and the choice and evaluation of exam questions from an external examiner. He went on with suggesting the introduction of an online test facility. The advantage for the students would be that they could use it for training purposes and would have the chance to get immediate feedback concerning their performance. Teachers could use it as a tool to seek information on how good a student or class is and it would help them setting up tests quicker and more efficiently.

The presentation was followed by a lively discussion about examination procedures.

Prof. Al-Assadi asked how the exact procedure of the final exam was, whereupon Mr. Hasan explained that the papers are send to external assessment and that if there is a mistake, the teacher gets advice how to solve it. Mr. Polla raised the question of whether there are any consequences for the students' final grade if they retake an exam and if this regulation is consistent among all Iraqi universities. Dr. Mohammed explained that the results of a second chance exam will be calculated against the results of the first try after a certain formula. This is consistent at least among the Kurdish universities, as he stated. Dr. Al-Robayie noted that oral exams are hardly applied at Iraqi universities and suggested that this form of examination should be used more often. As the advantage of this kind of exam he considered the fact, that if a student gets the main point of a subject this could be honored, whereas this is more difficult in a written exam. Another participant noted that this should rather be done in subjects such as English. Mr. Tippmann offered the suggestion that the kind of examination depends on the subject and that a lot of research has been done to identify the “right” kind of exam for respective subjects. Other participants raised questions such as if multiple choice questions are used, which Mr. Hasan answered with yes.

The last questioner wanted to know what happened, if the students break the exam regulations. The answer was that it always depends, but that an exam can be canceled if a student e.g. talks or copies.

**Overview: Rights and duties of lecturers and students**

**Dr. Bayez Mohammed**

**Head of Department of Electrical and Computer Engineering, Dohuk University**

Dr. Mohammed started his talk by presenting the current structure as it is at the Kurdish universities with the University of Dohuk as an example.

He started his presentation with outlining the structure of the university with the University Council as the highest authority above the President Head Office (see figure 6 in the annex). He pointed out that each of the universities, the departments and the colleges have their own council.
He continued explaining the formal regulations for the promotion of lecturers. Each degree leads to one or two possible ranks at the faculty or department and it is also bound to a certain number of years after the degree and the number of scientific publications. Figure 7 in the annex gives an overview of these regulations.

Regarding the duties towards the institute, he mentioned that an assistant researcher or engineer has to teach 16 hours per week, an assistant lecturer twelve hours, a lecturer ten hours, an assistant professor eight and a professor six hours per week. As the total work load per week stays at 30 hours per week though, the amount of time for other work fields of the staff members adjust accordingly (e.g. more research time and office hours for professors than for assistant lecturers). All staff members have to submit an annual report about all their activities during the year, Dr. Mohammed stated. They are also to provide technical advise to governmental institutes and private organizations.

He listed further duties like the supervision of laboratories, the application of proper safety regulations, doing research and performing examinations. Also, contribution to university activities and cultural events, participation in councils and committees inside and outside the university, contribution to development of the departments by studies, researches, plans, syllabus enhancements as well as to conferences, symposiums and workshops are expected according to the regulations.

Towards the students, the staff members are to educate and help them by teaching, solving exercises and assignments during their office hours and give advise to them for their projects and study. Also, they are requested to support them with social problems and join their excursions and scientific visits.

Towards the community, as Dr. Mohammed continued to explain, the academic staff is expected to actively contribute to build a democratic Iraqi community which helps to create a high standard of civilized humanitarian society.

For the students, as he continued to explain, a number of rules exist for their proper behavior at the university and their attendance to lectures. In turn, no study fees are charged, text books can be borrowed without charge and all university premises like libraries, facilities, equipment, objects of culture, sport and medicine, etc. can be used freely. Also, financial support and accommodation is provided for students under certain circumstances.

After his speech, the question was raised if the publishing of papers is a prerequisite for becoming a professor, which Dr. Mohammed answered by giving the number of 13 publications within nine years.

To the question if there are programs against corruption at the university, he answered that there is no corruption at Iraqi universities and that high penalties are applied to corruption.

The question about the existence of practical research was asked, which Dr. Mohammed answered by giving the number of $ 1,5 million which had been spent for new equipment, and that a lot of practical problems exist, where practical research is taking place, which in the end always is targeted at solving societal problems.
Prof. Yahya Mahdi Hadi Al-Mayali  
Dean of the College of Mathematics and Computer Science Kufa University

Prof. Al-Mayali started his presentation by introducing himself. He mentioned that he is the Dean of the Faculty for Mathematics and Computer Sciences at Kufa University, an institution with 17 different colleges and three research centers.

As introductory words he highlighted that Iraq had faced many challenges between 1980 and 2003, particularly in the field of higher education. He added that primary, secondary, and academic studies in Iraq are free of charge. He referred to the 2008 Academic Service Law, which consists of 21 articles, organizing the duties and rights of all university’s staff.

In the following, Prof. Al-Mayali outlined the general responsibilities of staff members which encompass, besides teaching, tutorial guidance, research and curriculum development, as well as administrative duties such as educational management, recruitment, and admission of students or staff appraisal.

As lecturers' duties he identified behavioral aspects, such as conformity with university regulations, being prepared to assist and advice students and giving them informal instructions. Furthermore each professor and lecturer needs to participate in committees within the department, and he must be an active member and devote himself/herself to research. As for their workload see figure 8 in the annex.

The lecturers' rights, as laid down in the above mentioned Academic Service Law, comprise the receipt of a salary according to scientific degree (from 800$ to 3000$), provision of an equipped office and free health service. Furthermore lecturers have the right to participate in scientific events worldwide and should get the possibility to continue their higher studies. If applicable they should be provided with accommodation and a safe environment, get additional wages for doing overtime, occupy certain administrative duties, and have vacation entitlements.

Prof. Al-Mayali’s next items were the students' rights, encompassing — among others — the right to receive good education and supervision, the right to get respect for their personality and not be discriminated on the basis of race or religion. They have the right to access all teaching and learning resources (such as libraries, Internet, health insurance), to non-academic activities, to information about the existing rules and administrative procedures. Furthermore, handicapped students have the right to get full support regarding their needs, whereas excellent students should be financially supported. In the time after graduation the student should get support to find a job and the university keeps contact with them.

In return the students' duties comprise the obligation to follow all university's regulations, treat staff and faculty members with respect, attend lectures and complete required assignments. Furthermore students must carry along their student ID cards, respect rules of personal hygiene, adhere to the appropriate dress code, refrain from smoking within the university or bringing food or drinks into classrooms. Also adhering to academic honesty and refraining from plagiarism, respecting university property and making sure that communication is
possible (e.g. checking mails regularly) are part of their duties.

Prof. Al-Mayali closed his presentation outlining the student's responsibilities concerning examinations, such as to check exam timetables, to be present at the exam venue 30 minutes ahead of time, to come prepared for their exams with proper stationery or to not use cell phones while in the exam room and several more.

After the presentation, Mr. Bahaa asked if facilities like an IT library exist at the university. Prof. Al-Mayali replied that there is a central IT library now, which acquired a huge range of references and textbooks and made it available to the students. Also, there is an E-library with material.

A lively discussion among the participants went on about the quality of these kind of facilities and the respective responsibilities at Kufa University.

Dr. Kamran Ali Abdulla Faraj
Sulaymania University

The last presenter of the second day, Dr. Faraj, thanked all participants for staying until the end and listening to his talk about rights and duties. He explained that he would not go too much into detail about what the actual rights and duties are, but rather talk about more general things related to this issue. Before actually getting into his topic, he took up the point of corruption mentioned in the discussion after Dr. Mohammed's presentation and made clear that, according to his point of view, there definitely exists a problem with corruption in Iraq.

In the following he outlined the objectives of the conference, which in his opinion are:

- Specify the roles of all national and international cooperation.

At the end of the conference all participants should collaborate on drafting a future-oriented curriculum, that will take long term measures into account. Members of both countries shall set up a catalog of measures that contain a demand-oriented IT concept for higher education in Iraq.

In the following Dr. Faraj stressed the importance of defining and distinguishing the terms “rights” and “duties” before going into detail. A “right” is, according to Dr. Faraj, something we have as human being, things we are entitled to, such as the right to security, the right to vote or to speak. A “duty” he defined as something you are obligated to, things we ought to do because of what we owe to other people or the world we live in. He compares rights and duties to a coin with two sides (head/tail), they complete each other (e.g. the right to speak without being interrupted also comprises the duty not to interrupt anyone else).

Since a lot of information concerning the actual rights and duties have already been delivered in previous presentations, Dr. Faraj decided not to go over them again, but rather address an issue he considered as very important, which is respect and mood. “Respect makes up the common point between teachers and stu-
ents”. He considered it as very important that students and teachers respect each other and that this is the basis for fruitful working. Also he stressed the importance of the mood of a teacher/student. He explained that a lot of things depend on mood (e.g. “if I am in a good mood I am good to students, and I give good marks”, and the opposite is true if in a bad mood).

Dr. Faraj concluded his presentation by stating “soldiers do no not safe the country from enemies but teachers safe the country from enemies”. According to him teachers are very important and can make the country safe by education, especially in the higher education sector.

The first point of discussion after his talk was the question of how many duties are reasonable, whether laws are really necessary to enforce rights and whether more freedom and less laws could be the better approach. Also the question of corruption was raised once more by Dr. Mohammed. A dispute arouse about the definition of corruption and whether there is corruption in Iraq, inside or outside universities. Mr. Tippmann intervened by stating one should not fight corruption but rather fight for equal rights and good education for all.

Another participant posed the question of whether there is a gap between teachers and professors in Iraq and Germany. Lecturers generally have a different position and more authority in Iraq, whereas the relation in e.g. Germany is more equal. Dr. Faraj agreed to this point and added that in Iraq some people are snobbish just because they are teachers and that this shouldn't be that way. A fierce debate about the definition of respect and what exactly students should be allowed or not in class arouse. There were various opinions about whether students should be allowed to eat or drink during a lecture or just leave a class and which behavior to consider polite.

The last point of discussion dealt with the issue of “mood” and what could be done about it. Dr. Faraj answered this question by stating that moody teachers should not be allowed to teach.

After this Mr. Tippmann closed the session of the second day and thanked everyone for delivering such useful facts. He announced that at the following day some information about the situation in Germany would be offered and expressed the hope that this would lead to a fruitful discussion about what to make out of all this information.
Wednesday, September 29th 2010

Moderation: Dr. Nazir Peroz

Dr. Peroz, head of the Center for international and intercultural Communication (ZiiK) of the TU Berlin, welcomed everybody to the third day of the conference and briefly outlined this day's program: there would be three presentations in the morning and in the afternoon a big discussion round was planned. Then he introduced Prof. Nestmann, professor for computer science at TU Berlin who would deliver details and in-depth information about the curricula at TU Berlin.

Prof. Uwe Nestmann

Faculty of Electrical Engineering and Computer Science, TU Berlin

"Education and curriculum at the Faculty for Electrical Engineering and Computer Sciences at the TU Berlin"

Prof. Nestmann started by stating that there have been changes concerning the curriculum at TU Berlin since last year's conference¹, due to the fact that a curriculum is always changing. He stressed that his talk was going to focus about the forthcoming changes and also referred to Prof. Mahr's presentation from the first day of the conference, in which he had mentioned developing a curriculum is not something you do on your own, but there are a lot of bodies involved.

The first main issue Prof. Nestmann dealt with was to outline the restrictions of the scope of the development of a curriculum for a new study program:

- Local state government (State of Berlin)
- Federal government (less influence)
- Accreditation agency (this is a rather new point: since about 5-6 years all new Bachelor and Master programs must be tested by this agency and then regularly become be re-evaluated)
- Council of university presidents
- Professional organizations (e.g. German Computer Science Society, they have worked out recommendations for curricula in Computer Sciences, which are not strongly binding, but it is useful to have a reasonably comparable system at every university)
- Internal decision bodies

He also mentioned the relevance of the available competencies of the teaching staff. One

¹ Prof. Nestmann had been giving a keynote about the current situation of research and education at the TU Berlin during the conference in 2009.
cannot teach a certain subject without suitable staff. If new positions are to be occupied a commission often looks if there is someone who could push and conduct their research. According to him this should not be underestimated.

Prof. Nestmann went on explaining the different rules, policies and habits involved in curriculum development. There are many levels involved:

- Federal State, the Berlin State University Law (Berlin is one of 16 German states)
- TU Berlin: There are regulations about the rights and duties of students; the university has a centralized stream of examination regulations.
- School of Computer Sciences and Electrical Engineering: There are two sets of regulations for each study program: (1) study regulations, defining what kind of course types are offered (upfront lectures, seminars, practicals, integrated courses etc., all of them imparting different kinds of knowledge) and (2) examination regulations, defining how and how often exams are to be held, what the grading scheme is and how they are rated against each other; This is done separately for each study program and needs to be compatible with the university regulations.

New regulations for studies had just been passed, as he continued to explain, due to the requirements of the accreditation agency. In the meantime, the Federal State Law has changed. All these permanent changes affect the university and the faculty, and the adaptation of the study regulations is an ongoing process. He considered this as good and bad: bad because it is time-consuming and good because the administration is constantly invited to reconsider the regulations.

In 2014, a lot of things need to be changed drastically because then the current accreditation is running out and the study course have to be re-accredited.

In the following Prof. Nestmann gave some further information concerning changes. The TU Berlin used to have a diploma curriculum, with up to ten semesters of diploma studies, possibly followed by a PhD. Internationally this was a very recognized degree, but due to European regulations the TU Berlin had to transform the curriculum to the new system. Now there is a Bachelor's program, which used to take six semesters (by now it is possible to do it in eight semesters as well), followed by a two-year's Master program.

The idea behind is that with a Bachelor's degree one can already enter the labor market and that there is the possibility of external admission to Master programs, e.g. from other regions or even other departments.

Prof. Nestmann went on explaining that the length of a first degree program is by law between 6-8 semesters, and in total one needs five years of studies before receiving a Master's degree. This means with 8 semesters of Bachelor studies, the Master study course needs to be shortened. This external ruling has also a strong impact on the curriculum, as he explained, since the length of a program plays an important role.

He continued to outline the properties of Bachelor and Master programs, which are:

- Scientific orientation (Master programs are not just training for the labor market but also have a scientific approach and produce scientific successors),
- Consecutiveness
- Duration
- Employability (also soft skills such as teamwork, presentation techniques and writing skills are important)
- Quality assurance (teaching evaluation, study progress and success control, alumni program)
- Counseling
- Modularization

Before moving on to his next point Prof. Nestmann briefly mentioned that there are two
types of universities in Germany, the more practical-oriented universities of applied sciences (Fachhochschulen) and the traditional, “proper” universities, which both have different approaches concerning what is taught and mentioned that this also translates into the curricula.

As the two main properties of Bachelor programs he named the teaching of the scientific foundations of the discipline (preparation for life-long learning) as well as employability. He also mentioned the difficulty of squeezing both approaches into a three-year-long program. He further explained the main competences Bachelor graduates have to acquire, such as mastering methods to analyze problems, building models how to see things at different levels of abstraction, and applying teaching skills to solve programming problems under technical, economic, and social conditions. Furthermore the student should have experience in the application area, in working in teams, and be able to take responsibility. He/she should also have competencies beyond Computer Sciences and be sensible for non-technical aspects, as well as being well-prepared for life-long learning in different areas of employment.

Prof. Nestmann continued showing an overview of the modules of the study course (see figure 9 in the annex) and highlighted the different areas of the courses: mathematics courses (blue), modules about the technological foundations of Computer Sciences, e.g. computer architecture, networks, operating systems (red) and programming methods and skills (green). He then explained that, to guarantee a certain level of quality and to properly prepare the students for what comes after this, no choices of courses are possible during first four semesters. During the fifth and sixth semester, Computer Science electives are offered for the minor studies including courses about management. Also, the Bachelor's thesis is part of this last part.

Prof. Nestmann went on to explain the Master's program in Computer Sciences. As the properties of this program he enlisted:

- Clear research orientation
- Specialization and depth (whereas the Bachelor program is more wide/teaching foundations)
- Broad range of topics
- Integration into research activities of the faculty
- Close cooperation with research institutions (e.g. Fraunhofer)
- Part of courses in English (30%, German and English language proficiency is required)
- Dual-degree-agreements with several foreign universities

He went on explaining what competences a Master graduate should have acquired. In comparison to the Bachelor he/she must have reached a higher maturity and self-assurance and should be able to lead a team. The student must have the necessary breadth and depth, get quickly used to new areas, be flexible and prepared for management and leadership.

He then showed a table with an overview about the Master's program, which can be found in figure 10 in the annex. All in all there are 120 Credit Points to achieve, 30 of which are awarded for the thesis. There is one semester for the thesis and it is to be a proper scientific, self-guided work. The major studies are about Computer Sciences and worth half of the Credit Points and are again divided into the specialization area and the free study subjects.

Prof. Nestmann explained that there is a lot of flexibility, whereas in the Masters in Computer Engineering and Electrical Engineering there is less flexibility. By this means they are more focused and different universities have their own, special profiles. In the field of Computer Engineering, TU is specialized in systems engineering, intelligent systems and communication-based systems, but this is going to change with the new study program in 2014.

He briefly presented the Bachelor program in Computer Engineering, in which most subjects are compulsory up to 6th semester and there is only limited freedom to chose. However, there
is the possibility to integrate an internship in the program.

The last part of his presentation comprised an overview about the Bachelor program in Electrical Engineering. This course of studies consists of Computer Sciences for Electrical Engineering, there is also Mathematics and Physics (compulsory) and actual electrical engineering (e.g. electrical networks, theoretical electrical engineering, measurement, semiconductors, energy and others). It mainly consists of compulsory subjects, and there are two specialization areas to chose from (electronics and information technology and energy) as well as an internship.

He concluded by mentioning that the Master in electrical engineering is three semesters long and similar to the Master in electrical engineering, concerning that there is not so much freedom and possibility for specialization (3 out of 7 subjects). He added that this is the status quo and very likely to change in three to four years, due to new professors, new laws and new technologies.

The first question from the audience addressed the issue of which prerequisites Iraqi students would need to fulfill in order to apply for a Master or PhD in one of those subjects at TU. Prof. Nestmann stressed the importance of this question, and explained that there is no single answer, but that this depends on what kind of Bachelor and previous knowledge the applicants have. They might need additional courses or propaedeutic ones. Admission is decided upon from case to case. PhD students would need a MSc or equivalence, if this is not the case there is a commission deciding on a case-by-case-base. However, it is vital that a local professor supports the project.

Prof. Al-Assadi mentioned that in Iraq there is the possibility that the Ministry of Higher Education and Scientific Research supports scientists/students in going abroad for one/three months and asked whether there is a possibility for cooperation in this field. Prof. Nestmann replied that this is possible as long as no degree is awarded, but one would have to check who would host the guests.

Another participant mentioned that Iraqi students often face the problem that a “Diplom” degree from Berlin is not accepted in Iraq as an equivalent to a Master, because in Iraq exists a different definition of diploma, but Prof. Nestmann answered that now in Berlin there are also Bachelor and Master programs, which differ substantially from the former diploma program.

Dr. Al-Nasseri addressed the question of who exactly decides about the study plan/syllabus, how long this process takes and what influence the teachers have in changing single points they are not happy with. Prof. Nestmann explained that the Academic Senate basically decides and the Berlin Senate has to approve the syllabus: The impetus comes from the teachers and professors themselves which create a proposal and submit it to the school commission (comprising students and professors) which passes it to the School Council, which in turn passes it to the Academic Senate of the TU Berlin. The Senate of Berlin is taking its final decision. According to Prof. Nestmann, this whole process takes 12-18 months.

Prof. Jochen Koubek

Professor for computer science
University of Bayreuth
Spokesman of the German Computer Science Society

"Developing a Curriculum in the field of Computer Sciences"

Prof. Koubek started his lecture by defining “Curriculum” as “a framework for a syllabus” which also includes a number of particular resources: Faculty members, Facility (electricity, climate control etc.), computing infrastructure (hardware, software, support etc.), laboratories, classrooms and well-equipped library. A curriculum contains at least documents about concept, syllabus and course description and study and examination regulations, which is also constrained by local laws.
The concept he presented consists of the parts “Mission Statement”, “Objectives”, “Qualification Profiles”, “Follow Ups”, “Organization” and “Terminology”. For the syllabus, he proposed a certain architecture (see figure 11 in the annex) which determines when to teach what.

He introduced the difference between the body of knowledge and the body of competence, the latter of which consists of different broader knowledge areas. These knowledge areas (modules) are divided into knowledge units that specify the level of detail of the teachings and define the modules within an area. Knowledge units in turn consist of topics and learning objectives.

![Prof. Jochen Koubek](image)

The syllabus, as Prof. Koubek continued, needs specific course descriptions. These are written in the style of a university course catalog and highlight the major topics and general expectations of the course, list prerequisites, the syllabus in form of an outline of the covered topics, a list of units covered by the course as defined in the body of knowledge and additional explanatory notes about the course, including goals, pedagogical suggestions, assessment strategies etc.

According to Prof. Koubek, sequences have to be defined for the courses. These will determine the order in which the modules will be taught and thus provide a chronological structure for the studies. There are two sequencing strategies available to choose from, as Prof. Koubek explained: The “Integration First” approach is designed to give students an early integrated understanding of basic topics across the knowledge areas reflecting the pillars of IT, which are Programming, Networking, Human Computer Interaction, Databases and Web Systems. The “Pillars First” approach deals with the fundamentals and details of the IT pillars first and leaves the integration of them for later in the study course. As an example for sequencing the courses, Prof. Koubek presented an overview of the Computer Engineering course plan of the TU Berlin (see figure 12 in the annex).

He specified four core documents which are crucial for a curriculum:

1. Concept
2. Syllabus and course description
3. Study regulations
4. Examination regulations

At this point, the question was raised in the audience about the different content at different universities, and how to reflect this in the curriculum design.

Prof. Koubek answered that he is focusing on creating transparency and on specifying what students have to learn and that based on this, it would be possible to compare different universities.

Another question was asked about the maximum number of Credit Points (CP) that can be reached. Prof. Koubek replied that it would be 180 CP for the Bachelor's course. One CP represents a workload of approximately 30 hours, which includes study hours for the student, but not teaching hours. Even though there is no particular formula for calculating the hours of workload, he recommended thinking in CP internally.

There are a number of international organizations which provide recommendations for the body of knowledge and CS curricula develop-
ment. These of course have always to be adapted to the specific requirements.

In the following, Prof. Koubek explained how to identify knowledge areas, based on the fact that a curriculum should have a significant real-world basis.

- Action fields are real-life tasks that should be managed. Action fields are multi-dimensional and connect professional, individual and social problems.
- Learning fields are didactical transformations of action fields. They contain a complex exercise which should be attended practically. They are described with competencies and content.
- Learning situations specify the learning fields. They are the result of a didactical reflection of professional, individual and social action fields.

Action fields need to be transformed into learning fields, which in turn are concretized into learning situations (e.g. repairing a router, setting up a network). To successfully realize a curriculum, he requested curriculum designers and instructors to think in terms of outcomes – what are students expected to perform after the course? He stated that it is hard, though, to specify these layers of understanding and particularly, to test them (e.g. competencies like “good communication skills”). As an illustration, he presented a hierarchy of learning categories (see figure 13 in the annex).

All in all, he recommended to emphasize the underlying and thus enduring principles of Computer Science rather than the details of the latest of specific tools (e.g. teach the concepts of programming rather than a particular programming language).

Other aspects to consider are maturity, which means that certain topics should be scheduled later in the study course and others earlier to facilitate students to getting this maturity, professionalism, which includes ethical, legal and economic concerns and implies reflecting on the social consequences of the topics one is studying (e.g. military research), and a code of ethics, as published by the Association for Computing Machinery (ACM). This code proposes certain moral imperatives to follow in any technological field of research and education.

It is the task of the curriculum to train students in personal skills, too. This includes teamworl (exercising critical judgment, evaluating and challenging received wisdom, recognizing own limitations, communicating effectively and behaving ethically and professionally) and flexibility (in order to cope with technological change and to allow for innovation)

According to Prof. Koubek, a successful implementation of a curriculum further depends on

- the availability of qualified instructors: Teachers should know what they teach and have to have experience in their subject. This is not always easy to find.
- Using interesting, concrete and convincing examples. This makes sure that students embrace certain important ideas.
- Using a variety of teaching methods. Computer Science education in the 21\textsuperscript{st} century needs to move beyond the lecture format and try different approaches to frontal teaching (problem-based learning, learning by failure, group work, practical projects, self work etc.)

After finishing the presentation, the question was raised of how to choose the method of teaching. Prof. Koubek replied that there are several online courses about this topic available and that the teacher has the responsibility for this. Eventually, students have to learn how to teach themselves. This is a different approach than school education and requires a certain maturity level.

The next question referred to the constitution of committee which decides about the curriculum.
Prof. Koubek stated that every stakeholder should be present (students, teachers, administration, representatives from private companies and from the “real world”). Usually, teachers are the majority, as a core, but there are a lot of outer circles.

One participant asked why students should be included, and Prof. Koubek replied that students often know best about the workload of the studies, and they are a good means to getting feedback.

Dr. Peroz thanked Prof. Koubek and after a short break asked Mr. Magnus and Mrs. Steinbeck to the stage for the next presentation.

**Mr. Ralph Magnus and Mrs. Saskia Steinbeck**

ZiiK, TU Berlin

"ICES – International Cooperation in Education and Science, Online platform"

Mr. Magnus welcomed all guests and introduced the topic of his speech: the implementation and realization of a tool to support the international cooperation in education and science especially between Iraqi and German universities.

Main objective of this project is the continuous and long-term support of this cooperation continuously.

Basic idea of this platform was created upon the experience of last year's conference. Mr. Magnus presented a brief overview of its outcome (see figure 14 in the annex). The platform is considered to be a tool to support the cooperation between the annual conferences.

He further explained, that the leading questions for the development of this tool are:

- How can we support the cooperation continuously?
- Which communication channels can be established?
- How can we abstract university structures and make them comparable?

Mr. Magnus continued showing example diagrams to illustrate these targets: In the beginning, the TU Berlin, which wishes to start a cooperation with a foreign university, does not have much information about its partner organization, its structure, bodies, responsibilities and representatives. And also vice versa, the partner organization does not know much about the other party. This is exactly the gap this platform wants to fill, to provide a means of communication to link partner organizations together and to create a platform to exchange necessary information in a timely manner.

Mr. Magnus then gave the word to Mrs. Steinbeck who continued talking about the implementation process of the platform. She started with listing the central goals for the development of this tool which are:

- "get to know each other" – meaning to get in touch with the right people working on similar projects, finding new people and thus allocate human resources for any project.
- Mutual support and assistance – i.e. support is most effective, when parties know about each other and their needs.
- Educational, scientific and administrative collaboration – This includes exchange of any information regarding the project (e.g. curricula, conference programs, expertise on special subjects etc.)
• Cultural exchange – This should also be a part of the cooperation, besides the scientific collaboration, to respect cultural differences. This can only be achieved, if cultural information is exchanged in advance.

According to Mrs. Steinbeck, the platform had been realized within the scope of a project by Dr. Peroz about "Computer Science and Development Countries" at the TU Berlin. Altogether, 34 students from all over the world and from different fields of studies (Electrical Engineering, Philosophy, Computer Sciences, Sociology etc.) joined forces in the development. The team formed three working groups to fulfill these tasks:

![Mrs. Saskia Steinbeck](image)

• Require elicitation (developing the goals of developing the needs, what to know and from where, where to go and how), Modeling (creating a concept based on these information; create use cases, organize the information etc.) and
• Implementation of the platform (technically).

The general outcome of this work was an online prototype to enable and simplify (target-oriented) communication and the exchange of information to show the possibilities for future upgrading of the system. She emphasized that one semester of project time is not enough to produce a fully productive system, but the main functions are ready to be used by now.

Details of the current system are:

• Visualize university structures (Which faculties and departments are there, how are they organized, directly make contact details of responsible persons available)
• Bidirectional mapping of institutional units to groups (e.g. institutions, faculty, working groups etc. projects can be assigned to specific groups).
• Establishing communication channels within/between these groups
• Assigning concrete projects/resources to related groups

Mrs. Steinbeck then illustrated, how this platform can give answers to essential questions of project cooperation:

• As the system is a web-based online tool, the platform provides an "always on" tool that is accessible by "all" – this will ensure a continuous support of the project cooperation.
• For each working group, concrete and context-sensitive forums, groups and projects can be established as communication channel between them.
• University structures will be made "browse-able" and related groups can be shown up. This will abstract structures and make them comparable.

As a result, she concluded that with this platform the communication between project partners can be effectively maintained.

In the following, Mr. Magnus and Mrs. Steinbeck gave a live presentation of the system as it is available online on the screen. Mr. Magnus again stressed that the system is still under development, subject to ongoing improvements and will receive further features and details.
As initial situation for the presentation, the example of six partner organizations had been fed into the system and an exemplary communication between them being shown. Partners can identify each other and retrieve organizational details. Mr. Magnus continued showing how each of the organizational units can be assigned to particular groups on the platform. These groups can then recommend or create projects like e.g. development of a curriculum and set start date and deadline, create discussion forums and add resources such as slides and presentations, documents etc. Other possibilities are inserting job offers or recruiting guest lecturers and spreading this information across the participating organizations.

Mr. Magnus finally mentioned that of course security aspects had been considered during the implementation of the system and that different (password-protected) levels of access to the platform exist.

After the presentation, a participant from the audience asked, if accounts to the system will be provided exclusively or if anyone can join the platform. Mr. Magnus replied that only administrators can add users to the platform. For the future, though, a model has to be developed how to realize demand-driven self-registration.

Another participant asked, if the platform is already online. Mr. Magnus replied that it is currently online, but for testing purposes only.

**Open discussion: Developing a Curriculum for Computer Sciences**

Dr. Peroz welcomed the guests to the last session of the conference and the final discussion on how to actually develop a proposal for a Computer Science curriculum for Iraq.

As an introduction, Mr. Tippmann presented a summary of the earlier presentations and discussions of the conference. After that, he drew the conclusion that a comprehensive impression about similarities and differences through-out Iraqi universities had been delivered. The goal of collecting information about the Iraqi structures has thus been reached, and on this basis, the development of a nation-wide curriculum for Computer Science can be initiated.

He then asked the question on how to proceed. The formal procedures like entrance requirements, admission and examination procedures as well as rights and duties of lecturers and students are to be stipulated by the Ministry of Higher Education and Scientific Research in the form of a "Framework Act for Higher Education", as he stated. Therefore, the discussion should focus on the development of a common nation-wide syllabus for Computer Science based on international standards.

Mr. Tippmann then explained that as an outline for this, the following aspects need to be considered, as they are internationally standardized for Computer Science:

- The Bachelor study course consists of six semesters.
- Altogether, 180 credit points (CP) need to be achieved in this course.
- During four semesters, basics in Mathematics and Computer Science are being taught with a total of 120 CP.
- 12-14 CP are to be achieved in the application area, 21-24 CP in Computer Science studies, 12 CP in Social Science studies and 12 CP with the Bachelor's thesis.

After that, he presented a tabular overview of the Bachelor's study course syllabus at the TU Berlin (see figure 15 in the annex) and stressed that especially what Prof. Nestmann said in his presentation about the structure at the TU Berlin should be considered: that some parts of the syllabus are based on international standards, whereas other parts can be designed by the TU Berlin.

After this summary of Mr. Tippmann, a controversial discussion began among the participants about different opinions about the credit point system, which should be applied for the Computer Science Bachelor's study
course, the duration of the study course, and how the number of semesters should be divided between basic and advanced courses.

To focus the discussion more on the Iraqi structures, Prof. Mayyahi summarized how the syllabi are structured in Iraq. In general there are three parts:

1. General studies which make up 9-12% of the studies (such as languages, human rights and economy studies) and covering a total of 142-168 CP needed in order to graduate.
2. General units at the faculty (Mathematics, Physics) covering 25 CP
3. Units at the department: compulsory subjects and compulsory optional subjects, covering 76 CP and free choice subjects covering 28 CP.

The question was then raised how to allocate the 160 CP to the single subjects and how to harmonize the Iraqi system with the international standard.

The next point of the discussion was the quality of the lecturers and the overall education.

It has been pointed out that all the lecturers come from different backgrounds: Some are pure Computer Scientists, some Computer Engineers or from Computer Education and that therefore different subjects need to be studied.

Dr. Al-Robayie added that to implement a good curriculum, there are often not enough lecturers at the Iraqi universities, however this might not be the case for a few universities. The others do not have a chance for creating these; he continued to ask how this could possibly be achieved when there are practically no chances to actually realize this. At his university, there is no chance to exploit these possibilities.

Dr. Peroz explained that when computer science studies were established in Germany in the 1970's, lecturers from different areas like mathematics, electrical engineering etc. started teaching computer science, which helped to counter the lack of lectures.

It is important to formulate proper objectives for Iraq by the Ministry of Higher Education and Scientific Research which reflects what the Iraqi society needs and why we would want to establish and organize departments or faculties. Further, one would need to ask which career prospects we would give to the students. Another important aspect is how to accept applicants for the study courses. As another important aspect Dr. Peroz considered the qualifications of the teachers, students and professors for new faculties of computer science. Furthermore he stressed again the importance of cooperation with international universities.

On the basis of these general objectives one can identify the special objectives for the study course and the establishment and organization of faculties. After the Iraqi government has defined how much percent should be assigned to compulsory subjects, optional compulsory subjects and general studies, the comparability of achievements have to be considered. The design must also comprise that students changing from an Iraqi university to TU Berlin can continue their studies immediately, without getting problems concerning the recognition of academic qualifications.

Dr. Almallah raised questions concerning the actual labor market: How many graduates are needed in order to accommodate the demand? He mentioned the problem of Iraq's instability: Since the country is not developed technically, economically and in terms of administration,
future needs are difficult to determine. The situation is rather unclear and it seems as if there are too many graduates for the moment, but there is hope that the situation is going to change and that there will be a shortage of graduates in the future.

Dr. Faraj stated that “war is damage” and that there must be reconstruction afterwards. It is also a loss of staff, and hence the country is now short of IT professionals with a Master or PhD degree. He expected the market to expand quickly and that there soon would be a great demand for people trained in IT.

Prof. Al-Assadi raised the question whether one should rather return to a “point-zero” or go on at the status quo and what would be the reasons for preferring one over the other. He suggested that now, as everyone has a concept of the situation, it might be a good idea for every participant to prepare a small sheet of paper containing information about the history, including

- how the curriculum came into existence,
- how has it developed since,
- how many students and graduates are there for BA/MA/PhD and
- what goals did they reach with their qualification.

Often, as he continued, there are high expectations coupled with non-existent structures like PCs and libraries. The specific situation in the country and within the society is worsening this. He did not favor to start at "zero" because there are decades of experience to build upon.

Dr. Peroz appreciated this proposal and assured that it would be very helpful. To the points Prof. Al-Assadi introduced, he wanted to add the following:

- general informations about the faculty
- number of students (how many male/female)
- number of lecturers (how many male/female)
- highest degree of the lecturers
- how many departments
- how many students are granted admission to the faculty each semester/year
- how many semesters does the study course have
- how many CP for each student per semester/year
- names/contents of the lectures per semester/year (syllabus)

He said he would appreciate if the universities could provide these informations soon. The results will form the basis for the development of a CS curriculum proposal for the next conference. He took the chance to invite all guests to the next conference which will take place on 26th September 2011 to present and discuss the achievements of the project until then.

Dr. Al-Yasiri thanked Dr. Peroz for his extensive efforts and endeavors in this field. He praised his and the whole team's work, particularly the implementation of this project and their interest in the field of post-graduate studies, which he considered as a very important element in building the teaching staff. He reckoned that these actions contribute to the development of the formerly insular country. He also referred once more to the 100 scholarships awarded by the DAAD and criticized that the requirements from both sides are too high and proposed to slightly lower them. At his university as well as at others there is a serious lack of scientists and staff holding a PhD. He suggested that e.g. the current IT administrator's education for Iraqi post-graduates at the TU Berlin could be taken into account for their Master's or PhD education, to accelerate the process of their academic graduation.
He further explained that there are a lot of PhD graduates in Iraq who have never been abroad, e.g. to the USA or Germany, in order to become acquainted with the scientific standards in these countries. According to Dr. Al-Yasiri this is what Iraq is actually in need of. He presented his idea for further development of cultural exchange between Iraq and Germany, namely that these scientists could be sent to Germany for one to three months in order to do research and benefit from this after their return to Iraq.

Prof. Al-Mayali argued that Iraq went through hard time for the last 30 years, and nevertheless they could maintain relatively high academic standards. As an example for that he mentioned the group of administrators which is currently being educated at TU Berlin, which are very competent keeping in mind the things that had happened in Iraq in the last decades. Even though they are the country's elite, the other scientist back in Iraq are merely slightly below that level. He suggested that when departments will be fully developed, one could extend this to other areas (such as the application area). Furthermore he mentioned a cultural cooperation project which Iraqi and US universities had carried out in the previous year. In this project about 500 Iraqi students from the third and fourth level (honors) had been invited to the USA for a summer school and a cultural summer program. There was a very positive feedback to this program and he suggested to introduce a similar program in the German-Iraqi cooperation, in order to benefit from it and to further reduce the gap existing in Iraq.

Dr. Peroz agreed to this idea, but mentioned that an obstacle for this lies within in the German scientific system which complicates graduation for foreign candidates, the more the higher the academic level (i.e. a Bachelor's degree is relatively easy to achieve but a PhD needs much more organizational efforts, like two professors supporting the candidate's research project in order to come to Germany). Hence he announced that a political solution to this should be found to create new concepts especially for countries after war. Therefore, also a PhD program for educating lecturers need to be developed. For this project it is vital to enlist the German professors' help.

Dr. Al-Jubori remarked that the possibilities for Iraqi PhD students to go abroad is currently completely funded by the Iraqi government and that the PhD supervisor could also come along, the German side would only need to invite them.

Dr. Peroz agreed to these statements and admitted that he had been surprised by the competence and capabilities of the 13 administrators from Iraq as well as from their respect and kindness. He said to be convinced that there are thousands of such persons in Iraq and that they should get the possibility to build Iraq's future.

To finish the discussion, Dr. Peroz proposed that all questions that have been raised during the last days of the conference should be addressed until the next conference in 2011. All participants are to send in their answers to the questions mentioned by Prof. Al-Assadi. On the basis of this input, a nation-wide curriculum shall be developed then.

Before the conference eventually ended Dr. Peroz took the opportunity to thank everyone for attending the conference and expressed the hope that all would meet again in the near future. He furthermore expressed this thanks to the German Federal Foreign Office and the
DAAD for their support and also to the whole conference team, all presenters and everyone else involved in the organization of the conference.

Finally the Iraqi guests thanked Dr. Peroz, the whole conference team the professors and the TU Berlin administration for organizing a conference for the second time. For the future the wish for a sound cooperation was expressed, hand in hand, to further deepen the relationship between Germany and Iraq.
Annex

Presentation slides

Figure 1: Educational courses at University of Technology, Baghdad

Slide taken from presentation of Dr. Hassan Al-Nasseri, University of Technology Baghdad

Figure 2: Overview of courses in Information Systems

Slide taken from presentation of Dr. Rana Freed Ghani Al-Tuma, University of Technology Baghdad
Figure 3: Comparison between Computer Science courses at UoT Baghdad and TU Berlin

Slide taken from presentation of Dr. Rana Freed Ghani Al-Tuma, UoT Baghdad

Figure 4: Calculation of student's ranks

Slide taken from presentation of Mr. Dler Salih Hasan, Salahaddin University Erbil
**Figure 5:** Iraqi grading system

- Iraq grade out of 100 percent with a passing grade of 50 percent. So the grade point average is out of 100. Most of the institutions (Universities, Colleges, Technical colleges ... etc.) uses the "word" grading system described below:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>90-100</td>
</tr>
<tr>
<td>Very Good</td>
<td>79-89</td>
</tr>
<tr>
<td>Good</td>
<td>70-79</td>
</tr>
<tr>
<td>Adequate</td>
<td>60-69</td>
</tr>
<tr>
<td>Acceptable</td>
<td>50-59</td>
</tr>
<tr>
<td>Weak/Failure/Pathetic</td>
<td>0-49</td>
</tr>
</tbody>
</table>

Slide taken from presentation of Mr. Dler Salih Hasan, Salahaddin University Erbil

**Figure 6:**

Slide taken from presentation of Dr. Bayez Mohammed, Dohuk University
Figure 7: Overview of formal regulations for the promotion of lecturers

<table>
<thead>
<tr>
<th>Degree</th>
<th>Rank</th>
<th>Promotion After (year)</th>
<th>Number of Scientific Papers (one should be Single)</th>
<th>New Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSc</td>
<td>Assistant Lecturer</td>
<td>3</td>
<td>2</td>
<td>Lecturer</td>
</tr>
<tr>
<td>PhD</td>
<td>Lecturer</td>
<td>4</td>
<td>3</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>PhD or MSc</td>
<td>Assistant Professor</td>
<td>6</td>
<td>3 (Original)</td>
<td>Professor</td>
</tr>
<tr>
<td>BSc</td>
<td>Assistant Researcher or Engineer</td>
<td>_____</td>
<td>_____</td>
<td></td>
</tr>
</tbody>
</table>

Slide taken from presentation of Dr. Bayez Mohammed, Dohuk University

Figure 8: Workload of lecturers

Table (1) Lecturer workload

<table>
<thead>
<tr>
<th>Scientific degree/ Administration Position</th>
<th>Work load/ week hours</th>
<th>Office and research Work</th>
<th>Total Hours/ Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Dean</td>
<td>2</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>Department Head/ Vice of Faculty Dean</td>
<td>4</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>Professor</td>
<td>6</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td>Assist professor</td>
<td>8</td>
<td>22</td>
<td>30</td>
</tr>
<tr>
<td>Lecturer</td>
<td>10</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Assist Lecturer</td>
<td>12</td>
<td>18</td>
<td>30</td>
</tr>
</tbody>
</table>

Slide taken from presentation of Prof. Yahya Al-Mayali, Kufa University
**Figure 9**: Overview of modules of the computer science Bachelor study course at TU Berlin

<table>
<thead>
<tr>
<th>CP</th>
<th>Bachelor's Program in Computer Science</th>
</tr>
</thead>
</table>
| 1st Sem. 29 CP | Digital Systems (8 CP)  
Algorithmic and Functional Solution of Discrete Problems (9 CP)  
Mathematical Foundations and Algebraic Structures (6 CP)  
Prep course (2 CP)  
Linear Algebra (6 CP) |
| 2nd Sem. 29 CP | Computer Organization (6 CP)  
Data Structures and Algorithms in Imperative Style (9 CP)  
Automata and Complexity (6 CP)  
Calculus I (6 CP) |
| 3rd Sem. 32 CP | Systems Programming (8 CP)  
Software Engineering (12 CP)  
Including Project  
Practical Program Development (6 CP)  
Logics and Calculi (6 CP)  
Calculus II (8 CP) |
| 4th Sem. 30 CP | Networks and Distributed Systems (8 CP)  
Database Systems (6 CP)  
Specification and Semantics (6 CP)  
Stochastics (6 CP) |
| 5th Sem. 30 CP | Computer Science Electives (21-24 CP)  
Minor Studies (12-15 CP)  
Management (6 CP) |
| 6th Sem. 30 CP | Bachelor's Thesis (12 CP)  
Social Aspects of CS (6 CP) |

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**Figure 10**: Overview of modules of the computer science Master study course at TU Berlin

<table>
<thead>
<tr>
<th>CP</th>
<th>Master's Program in Computer Science (Basic Structure)</th>
</tr>
</thead>
</table>
| 1st 30 CP | Major Studies (54 - 60 CP) including at least 30 CP in the specialization area  
- System Engineering  
- Dependable Systems  
- Intelligent Systems  
- Communication Systems  
Minor Studies (18 - 24 CP)  
General Studies (12-18 CP) |
| 2nd 30 CP | Master's Thesis (30 CP) |

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Slide taken from presentation of Prof. Uwe Nestmann, TU Berlin
Figure 11: Syllabus architecture

Slide taken from presentation of Prof. Dr. Jochen Koubek, University of Bayreuth

Figure 12: Study regulations

Slide taken from presentation of Prof. Dr. Jochen Koubek, University of Bayreuth
**Figure 13:** Learning outcome

<table>
<thead>
<tr>
<th>Level</th>
<th>Category</th>
<th>Cognitive Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Remember</td>
<td>recognizing, recalling, describing, stating</td>
</tr>
<tr>
<td>2</td>
<td>Understand</td>
<td>interpret, exemplify, classify, infer, compare, explain, paraphrasing, summarizing</td>
</tr>
<tr>
<td>3</td>
<td>Apply</td>
<td>execute (i.e. carry out), implement (i.e. use), compute, manipulate, solve</td>
</tr>
<tr>
<td>4</td>
<td>Analyze</td>
<td>differentiate, organize, attribute, discriminate, distinguish, sub-divide</td>
</tr>
<tr>
<td>5</td>
<td>Evaluate</td>
<td>check, critique, assess, compare, contrast</td>
</tr>
<tr>
<td>6</td>
<td>Create</td>
<td>generate, plan, produce, innovate, devise, design, organize</td>
</tr>
</tbody>
</table>

Benchmark and program objectives tend to be associated with the higher levels of this taxonomy, whereas instructional objectives tend to be associated with the lower levels.

e.g. Descriptors for the Course - Object Oriented Programming:
Justify the philosophy of object-oriented design and the concepts of encapsulation, abstraction, inheritance, and polymorphism.
Design, implement, test, and debug simple programs in an object-oriented programming language.
Describe how the class mechanism supports encapsulation and information hiding.
Design, implement, and test the implementation of “is-a” relationships among objects using a class hierarchy and inheritance.
Compare and contrast the notions of overloading and overriding methods in an object-oriented language.

Slide taken from presentation of Prof. Dr. Jochen Koubek, University of Bayreuth

**Figure 14:** Overview of the outcome of last year's conference

Slide taken from presentation of Mr. Ralph Magnus and Mrs. Saskia Steinbeck, TU Berlin
**Figure 15:** Overview of Computer Science Bachelor study course at TU Berlin

<table>
<thead>
<tr>
<th>how many semesters?</th>
<th>Bachelor’s Program in Computer Science (Basic Structure)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Basic Studies (Communication and Operating Systems, Software Engineering, Mathematics, Database and Information Systems) (how many?) (in total 160)</td>
</tr>
<tr>
<td></td>
<td>Bachelor's Thesis (how many?)</td>
</tr>
</tbody>
</table>

Slide taken from presentation of Mr. Daniel Tippmann, TU Berlin
Developing a Curriculum for Computer Science
Conference program

First day: Monday September 27th, 2010
ROOM: A 060

moderation: Prof. Dr. Hans-Ulrich Heiß, Dean of Study Affairs at Faculty IV (Computer Science and Electrical Engineering), TU Berlin

2:00 pm welcome and opening

Prof. Dr. Wolfgang Huhnt, Vice President of TU Berlin
Mr. Klemens Semtner, Federal Foreign Office, Berlin
H.E. Dr. H. M. Fadhilala Al-Khateeb, Ambassador of Iraq in Berlin
Mr. Alexander Haridi, Head of Section Irak/Iran, DAAD, Bonn

2:30 pm main talk

Social and economic aspects of the study course Computer Sciences and Computer Engineering in Iraq
Dr. Hassan Al-Nasseri, University of Technology Baghdad

3:30 pm coffee break

4:00 pm Strategic prerequisites to develop a curriculum
Prof. Dr. Bernd Mahr, TU Berlin

5:30 pm end
Second day: Tuesday September 28th, 2010

Moderation: Mr. Daniel Tippmann, TU Berlin

9:00 am  overview: current situation of the structure and content of the course of study “Computer Science”
Dr. Rana Ghani, University of Technology Baghdad
Prof. Dr. Kais Al-Sabbagh, University of Baghdad
Prof. Noori Mayyahi, Al-Qadisiya University

10:30 am  coffee break

11:00 am  overview: entrance requirements and admission procedure
Assist. Prof. Dr. Amer Almallah, Mustansiriyah University
Prof. Dr. Tawfiq Al-Assadi, Babylon University
Dr. Ramathan Muttar, Mosul University
Dr. Hussein Al-Juboori, Tikrit University

12:30 pm  lunch break

2:00 pm  overview: examination requirements and procedures
Dr. Kamal Al-Yasiri, Thiqar University
Mr. Dler Hasan, Salahaddin University Erbil
Dr. Abdulkareem Alkhaled, Basra University
Dr. Kadoori, Diyala University

3:30 pm  coffee break

4:00 pm  overview: rights and duties of lecturers and students
Dr. Bayez Mohammed, Dohuk University
Prof. Yahya Al-Mayali, Kufa University
Dr. Kamran Faraj, Sulaymania University
Third day: Wednesday September 29th, 2010

Moderation: Dr. Nazir Peroz, TU Berlin

9:00 am  talk: Education and curriculum at the Faculty for Electrical Engineering and Computer Sciences at the TU Berlin
            Prof. Dr. Uwe Nestmann, TU Berlin

10:00 am coffee break

10:30 am talk: Developing a curriculum in the field of Computer Sciences
            Prof. Dr. Jochen Koubek, University of Bayreuth

11:30 am presentation: ICES – International Cooperation in Education and Science, online platform
            Mr. Ralph Magnus and Mrs. Saskia Steinbeck, TU Berlin

12:30 pm lunch break

2:00 pm open discussion
        Developing a curriculum for Computer Sciences

4:00 end
venue
Technische Universität Berlin
Faculty for Electrical Engineering and Computer Sciences
Institute of Architecture
Straße des 17. Juni 152
10623 Berlin

organizer
Center for international and intercultural Communication (ZiiK)
Faculty for Electrical Engineering and Computer Sciences
Dr. Nazir Peroz

contact details:
conference coordinator: Mrs. Amaya Steinhilber
phone: +49 (0) 30 314 24 108
mobile: +49 (0) 1577 922 93 54
email: amaya@cs.tu-berlin.de

Registration for participants is required in advance.
List of participants

- H.E. Dr. Hussain M. Fadhlalla Alkhateeb, Ambassador of Iraq in Berlin
- Prof. Dr. Salah M. Aliwi Al-Abbas, Cultural Attache, Iraqi Embassy in Berlin
- Dr. Hassan Awheed Jeiad Al-Nasser, University of Technology Baghdad
- Dr. Rana Freed Ghani Al-Tuma, University of Technology Baghdad
- Prof. Dr. Noori Farhan Adhab Mayyahi, Al-Qadisiya University
- Assist. Prof Dr. Amer Almallah, Mustansiriyah University Baghdad
- Prof. Dr. Tawfiq Abdulkhaleq Abbas Al-Assadi, Babylon University
- Dr. Thafer Ramathan Muttar, Mosul University
- Dr. Hussein Ali Saeed Thallab Al-Jubori, Tikrit University
- Dr. Kamal H Yasar Al-Yasiri, Thi-Qar University
- Mr. Dier Salih Hasan, Salahaddin University Erbil
- Dr. Jaleel Ibrahim Kadoori Al-Robayie, Diyala University
- Dr. Bayez K. Mohammed, Duhok University
- Prof. Yahya Mahdi Hadhi Al-Mayali, Kufa University
- Dr. Kamran Ali Abdulla Faraj, Sulaymania University
- Prof. Dr. Abdulkareem Khames Hasan Alkhaled, Basrah University
- Mr. George Eskander Hussein Ajam, Babylon University
- Mr. Muhanad Mohammed Kadum Al-Zhuaiyany, Thi-Qar University
- Mr. Emad Adil Dawood, Dohuk University
- Mr. Ihab Ahmed Najm Jabor, Tikrit University
- Mr. Mohammed Baqer Mohammed Kamel, Al Qadisiya University
- Mr. Alaa Khalaf Hamoud, Basrah University
- Mr. Bahaa Qasim Mohammed Al-Musawi, Kufa University
- Mr. Polla Abdul-Hamid Fattah, Salahaddin University Erbil
- Mr. Firas Mohammed Salh Whab, Mosul University
- Mrs. Raghdah Jameel Mahmood Al-Shaikhli, University of Technology Baghdad
- Mrs. Shene Jalil Jamal, Sulaymania University
- Mrs. Huda Mohammed Salik Mohammed Kadim, Diyala University
- Mrs. Zaynab Raed Ahmed Al-Rubaye, Baghdad University
- Mr. Klemens Semtner, German Federal Foreign Office
- Mr. Alexander Haridi, German Academic Exchange Service (DAAD)
- Prof. Dr. Jochen Koubek, University of Bayreuth
- Mr. Klaas Glenewinkel, MICT
- Mrs. Lilli Oberndorfer, wp.i / tabadul.de
- Mr. Martin Monk, wp.i / tabadul.de
- Mrs. Ava Tawfiq
- Mr. Salam Rubaye
- Mr. Mathias Hamann
- Mr. Sarkaft Shareef, TU Berlin
- Prof. Dr. Wolfgang Huhnt, TU Berlin
- Prof. Dr. Hans-Ulrich Heiß, TU Berlin
- Prof. Dr. Bernd Mahr, TU Berlin
- Prof. Dr. Uwe Nestmann, TU Berlin
- Dr. Nazir Peroz, TU Berlin
• Mr. Daniel Tippmann, TU Berlin
• Mr. Ralph Magnus, TU Berlin
• Mrs. Saskia Steinbeck, TU Berlin
• Mr. Chi-Thanh Christopher Nguyen, TU Berlin
• Mr. Marius Mailänder, TU Berlin
• Mrs. Amaya Steinhilber, TU Berlin
• Mrs. Maxie Lutze, TU Berlin
• Mrs. Beriwan Al-Berwari, TU Berlin
• Mrs. Wardeh Tamim, TU Berlin
• Mrs. Agnieszka Zielinska, TU Berlin
• Mr. René Herlitz, TU Berlin
• Mrs. Julia Beck, TU Berlin
• Mr. Zhou Xun, TU Berlin
• Mr. Christoph Herbst, ZiiK/TU Berlin