

## NEW APPROACHES TO TEACHING ENGLISH TO GRADUATE STUDENTS AT TECHNOLOGICAL UNIVERSITY

*Keywords: the English language, engineering education, technological university, Master's Degree student, Ph.D. student.*

*The paper focuses on the structure and content of the English language teaching for Master's Degree and Ph.D. students at a technological university, which is based on developing skills required for special engineering and academic purposes. The author shows the main principles, methods, challenging problems of the English language teaching using the courses developed at the Department of Foreign Languages for Professional Communication at Kazan National Research Technological University.*

*Ключевые слова: английский язык, инженерное образование, технологический университет, магистры, аспиранты.*

*В статье описывается структура и содержание образовательных программ по иностранным языкам для магистрантов и аспирантов технологического университета, основанных на развитии умений и навыков необходимых для решения специальных профессиональных и научных задач. Показаны основные принципы и методы обучения иностранным языкам на примере курсов дисциплин, разработанных на кафедре иностранных языков в профессиональной коммуникации Казанского национального исследовательского технологического университета.*

The integration of Russia into the world economy has led to the review of principles of linguistic education at universities. Nowadays, a foreign language is not considered to be a final course of education but an instrument for communication, for solving professional and academic problems. Developing and introducing new English courses for special and academic purposes is the main aim for the universities, which train future engineers and scientists. One of the largest engineering Russian universities is Kazan National Research Technological University enrolled over twenty five thousand students in fifteen educational institutes, which offer sixty eight Bachelor's Degree programs, twenty eight Master's Degree programs, and twelve Ph.D. profiles. The University's academic choices are diverse and include a range of engineering fields such as chemistry and technology of polymer materials and composites, petrochemical technologies and processing of hydrocarbon feed stock, nanotechnologies and nanomaterials, textile industry, food engineering and production, mechanical engineering, and information technology. Each program or profile has its own professional direction and requires a special focus on the English course content. The structure and content of the English language teaching are developed by the Department of Foreign Languages for Professional Communication. This article aims at introducing the Department's experience and the challenges faced over the last five years during the development of the new English language courses and programs for special and academic purposes.

There are three stages of the English language teaching at the Department of Foreign Languages for Professional Communication. The first stage is the course of General English (Conversational English) which is developed for Bachelor's Degree students. The second stage is the course of English for special purposes designed for Master's Degree students. The third Academic English course is created for Ph.D. students. Here we consider the last two stages.

### *A. English for Special Purposes*

One of the main problems for the development of the special English language course for Master's Degree students is the diversity of their professional areas. It is a very difficult task because we should provide the necessary structure and content of the English language course meeting the professional requirements of the employers.

One of the largest Master's Degree profiles at the University is Chemical Engineering. There are about thirty two special programs within this profile; each one of them has its own features. Some of them are about physics and chemistry of polymers and plastics, while the others deal with chemical technology of various compounds and materials. Some programs are related to petrochemical industry and hydrocarbon feedstock. A number of programs study food industry, or biological sciences.

In terms of the Chemical Engineering profile, two credit hours are given for Business English Course and three credit hours, including one credit hour for the exam, are for the English language course.

The Business English Course aims at developing the necessary communicative skills required for business negotiations, phone calls, presentation, translation of scientific articles, abstracts, CV, business cards, and etc.

The content of the English language course has the component, which is acceptable for the majority of technical educational profiles, and the component meeting the requirements of the given Master's Degree program. The first component is based on the topics and vocabulary taken from Processes and Equipment for Chemical Technology course. It includes English topics concerning various engineering processes. They are hydromechanical, thermal, mass exchange, refrigerating, and mechanical processes. It was developed in cooperation with professors from the Department of Processes and Equipment for Chemical Technology.

This cooperation resulted in publishing tutorial book "The basics of Process Technology" [1].

The second component is necessary to train students in their special fields according to their Master's Degree Program. In order to develop this component, several groups of academics from the Foreign Languages for Professional Communication Department were engaged in finding the authentic English language teaching and learning materials for each special profile. The content of the English language courses was designed in association with the academics from the engineering departments. Besides, the academics with Ph.D.s in chemistry and engineering are also among the staff of the Foreign Languages for Professional Communication Department. The mutual contribution of academics from linguistic and engineering departments resulted in creating interdisciplinary links and publishing tutorials which contain the educational linguistic material based on the students major specialization [2-7].

Each tutorial has its definite structure. Firstly, students work with the vocabulary and terms, then with the authentic English language texts, and after that they do different exercises provided for translation from Russian into English and vice versa. Also there are various creative exercises which develop communicative skills and abilities in professional area. Students get skills to describe chemical reactions and elements, mathematical operations, diagrams, line graphs, pie-chart, tables, equipment, devices, technological parameters and processes, technological schemes and flow sheets. The course is made up of reading, writing, listening, and speaking.

#### *B. English for Academic Purposes*

Ph.D. students are to read a large amount of academic materials in English and analyze critically the information they have read or heard. Besides, they are to write and publish research papers in English to be well known and respected in academic circles. Therefore, English language teaching for academic purposes is an important component of any English teaching program.

This course is based on the individual needs of students. Ph.D. students choose the scientific foreign papers, connected with their research area. During the reading and translation of these papers Ph.D. students learn the scientific vocabulary and terms, as well as they explore the new scientific approaches of foreign re-

searchers. Skills of critical analysis of the information can be developed by brief retelling of a paper in the English language which must include students opinion on advantages and disadvantages of methods proposed by the authors, comparative analysis of results, etc. The teacher just directs and helps Ph.D. students with phonetics and translation, but students play the main role, because they are to make up the content of their study.

At the end of the course Ph.D. students write an English paper on their research and prepare a presentation for scientific conference. Here the role of the teacher is more important. We give classes on academic writing and presentational skills.

Nowadays the content and structure of English language programs at a technological university are to meet the professional requirements of the employers. To be effective such programs are to be based on interdisciplinary links, integrative approach [8, 9], highly qualified teachers, and well motivated students. The English teaching courses developed at the Department of Foreign Languages for Professional Communication allow students to gain high quality professional skills and abilities for successful adaptation in life, study and work in the multinational medium.

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