European Chemistry Thematic Network Association

Site Visit Report

For the application for the

CHEMISTRY EUROBACHELOR® LABEL

of the

Samara State Technical University

for the study programme

Bachelor of Chemistry
Organic and bioorganic chemistry

Visit date:
12-13 of April, 2021

The site visit was carried out partly online on the ZOOM platform. The review was organized jointly with the Russian accreditation agency AKKORK, the Russian members of the reviewers' team were directly at the university.

Composition and Affiliation of the Site Visit Team
Dr. Raymond Wallace
Fellow of the Royal Society of Chemistry (UK), External expert at the University of Plymouth (UK), external expert, consultant at the University of Malta (ECTN expert).

Dr. Korsakov Mikhail K.
Director of the Center for the Transfer of Pharmaceutical Technologies named after M.V. Dorogov Federal State Budgetary Educational Institution of Higher Education "Yaroslavl State Pedagogical University named after KD Ushinsky".

Dr. Lavrenov Sergey N.
Senior Researcher, Laboratory of Chemical Transformation of Antibiotics, Federal State Budgetary Institution "NIINA", Russian Academy of Medical Sciences.

Elena Zakharova
Student of the Master's programme of National Research Technological University MISiS (expert from the student community).

Background of the visit

History of the University

In 1930, mechanical, power and chemical engineering institutes were opened in Samara.

In 1933, three previously independent institutes of higher education became the joint Middle Volga Industrial Institute.

In 1935, the Middle Volga Industrial Institute was renamed into the Kuibyshev Industrial Institute. The institute was named after V. V. Kuibyshev.

In 1962, the Kuibyshev Industrial Institute was reorganised into the Kuibyshev Polytechnic Institute named after V.V. Kuibyshev.

In 1980, it was awarded the Order of the Red Banner of Labour.

In 1992, the institute received the status of a university.

In 2015, it was merged with the Samara State University of Architecture and Civil Engineering.

In 2016, it became one of the 11 regional flagship universities in Russia.

The year of birth of the Faculty of Chemical Engineering is 1930.

In 1934, the Samara Chemical Engineering Institute became part of the Middle Volga Industrial Institute as the Faculty of Chemistry.

In 1961, the Faculty of Chemistry was divided into two faculties – Chemical Engineering and Engineering and Technology.

In 1972, the Faculty of Oil and Gas Technologies became a part of the Faculty of Engineering and Technology. The number of graduate chairs was increased at the faculty.

In 2005, at the Chair of Organic Chemistry, the specialty “Chemistry” was opened. After the transition to the Bachelor and Masters education levels the chair provides bachelor degree programmes in the field of study “Chemistry”, specialisation “Organic and bioorganic chemistry”.

Statistical data

There are 671 intramural students at the Faculty of Chemical Engineering.

470 students have graduated since 2013, and 446 of them are employed.

The faculty has five chairs:

- Chair of General and Inorganic Chemistry
- Chair of Organic Chemistry
- Chair of Analytical and Physical Chemistry
- Chair of Technology of Organic and Petrochemical Synthesis
- Chair of Chemical Technology of Oil and Gas Processing

The faculty staff contains 137 members, including 12 professors, 53 associate professors, 12 teachers and assistants, 15 Doctors of Sciences and 63 persons with Ph.D. degree.

Assessment criteria

1. Learning outcomes: Chemistry-based Practical Skills

Practical training in the disciplines of the program takes 89 credits (3208 hours), 42 credits of which (1528 credits) are allocated to laboratory work. 18 credits are allocated to practical work, including: 6 credits for educational practice (dispersed throughout the semester) within the framework of the project activity module (3 credits for introductory practice for 1 year of study, 3 credits for project practice in the second year of study), 3 credits for industrial technological practice in the summer in the third year of study, 3 credits for industrial practice – dispersed research work during the semester, involving work in the laboratory, 6 credits for pre-diploma internship(diploma work preparation, including experimental part)

Teaching practice is implemented as part of the project activity module along one of three project and educational tracks: higher scientific school, technological entrepreneurship, leadership school, aimed at introducing real project activities with the subsequent implementation of practical research or engineering projects (at the choice of students) in interdisciplinary (if necessary) teams of different ages. Project activities are compounded of educational activities (lectures, master classes, round tables with representatives of employers), which are planned according to the tasks of project activities. In the third and fourth years of study, team project work continues within the discipline "Practice-oriented project".

The structure of the study programme includes a sufficient set of the disciplines that form all the necessary professional competencies and practical skills that students will need in their professional occupation. Employers of the region highly commend the level of the programme graduates' training and note its compliance with the existing requirements for the personnel qualification. At the same time, a survey of employers shows that graduates need a fairly long period – from three to six months – to master the basic skills of practical work and to cope with the basic functions. The experts believe that there is a need to enhance the elements of practical training in the programme related to future professional activities in chemical enterprises.

2. Content

The number of ECTS credits for the programme is 240. The programme includes 41 disciplines and five practical trainings. There are 19 disciplines assessed in the form of an examination, 10 disciplines assessed in the form of a pass-fail test with a grade, 12 disciplines assessed in the form of a pass-fail test, and five practical trainings assessed in the form of a pass-fail test with a grade. The minimum discipline time is one credit. The maximum discipline time is 19 credits.

The core of the programme (compulsory part) includes disciplines of 170 credits.

Discipline number	Discipline name	Credits (ECTS)
B1.O.01.01	Foreign language	9
B1.O.01.02	History (history of Russia, general history)	3
B1.O.01.03	Philosophy	3
B1.O.01.04	Physical Culture and Sport	2
B1.O.01.05	Economics	3

B1.O.01.06	Law	2
B1.O.01.07	Sociology	3
B1.O.01.08	Psychology of social communication	1
B1.O.01.09	Russian language and culture of communication	2
B1.O.02.01	Mathematics	16
B1.O.02.02	Equations of mathematical physics	3
B1.O.02.03	Computer science	2
B1.O.02.04	Physics	14
B1.O.02.05	General chemistry	7
B1.O.02.06	Inorganic chemistry	7
B1.O.03.01	Analytical chemistry	13
B1.O.03.02	Physical chemistry	16
B1.O.03.03	Quantum chemistry	4
B1.O.03.04	Organic chemistry	19
B1.O.03.05	Colloidal chemistry	4
B1.O.03.06	Chemical Technology	6
B1.O.03.07	High molecular weight compounds	6
B1.O.03.08	Crystal chemistry	4
B1.O.03.09	Ecology	2
B1.O.03.10	Life safety	2
B1.O.03.11	Civil defence	1
B1.O.03.12	Chemical foundations of biological processes	5
B1.O.03.13	Technique of work in a chemical laboratory	3
B1.O.03.14	Fundamental structure of the chemical	3
B1.O.03.15	Theoretical foundations of instrumental methods of analysis	3
B1.O.04.01	Innovative Economy and Technological Entrepreneurship	2

The programme includes 10 additional chemistry subdisciplines of 52 credits. Of these, eight disciplines of 46 credits are mandatory for students.

Discipline number	Discipline name	Credits (ECTS)
B1.B.01.01	History and methodology of chemistry	2
B1.B.01.02	Computational methods in chemistry	4
B1.B.01.03	Modern methods of identification and isolation of organic compounds	6
B1.B.01.04	Bioorganic chemistry	13
B1.B.01.05	Workshop: synthesis of organic preparations	9
B1.B.02.01	Practice-oriented project	6
B1.B.ДВ.01.01	Information technology in chemistry	3
B1.B.ДВ.01.02	Chemical modeling	3
B1.B.ДВ.02.01	Basics of medical chemistry	3
B1.B.ДВ.02.02	Introduction to pharmaceutical chemistry	3

List of the elective disciplines usually chosen by students:

- Business communication – one credit;
- Innovative practices of technology entrepreneurship – two credits.

The total number of credits in disciplines that are related to chemistry, physics, biology or mathematics is 207 credits, taking into account elective disciplines, including a bachelor's thesis, of which 201 credits are compulsory:

- chemistry – 165 credits, including a bachelor's thesis, of which 159 credits are compulsory;
- physics – 17 credits, of which 17 ones are compulsory for study;
- biology – seven credits, of which seven ones are compulsory;
- mathematics – 18 credits, of which 18 ones are compulsory.

12 ECTS credits are assigned for a bachelor's thesis. In accordance with the educational standard, for the completion of the thesis, a compulsory pre-graduation practice is carried out, for which six credits are assigned. For the preparation of a thesis defence and the defence itself six credits are assigned. Additionally, the programme provides nine credits for the discipline "Practical course: synthesis of organic compounds" during the 8th semester, intended for the implementation and processing of the results of a thesis experimental part.

Content-wise, the study programme fully complies with the requirements of the Federal State Educational Standard of Higher Education in the field of study Chemistry. The content of the programme fully meets the demands of various stakeholders: the state, regional labour market, social partners and students. The content of the programme is notable for its focus on the balanced formation of students' competencies that characterise personal qualities of a human, but are an integral part of his professional competence, competencies aimed at developing, maintaining and improving communications and competencies, reflecting the formation of entrepreneurial skills and abilities.

3. ECTS and Student Workload

Students must study 17 weeks in each fall semester (1st, 3rd, 5th, 7th), 17 weeks in the 4th and 6th semesters and 13,5 weeks in the 8th semester. 34 weeks per year in the 1st, 2nd and 3rd years of study and 30,5 weeks for the 4th year. 132 weeks in total.

The workload of students is 56.5 hours per week on average, including independent work and electives. This amounts to about 31-38 hours are in-class lessons.

One credit corresponds 36 academic hours, including all possible activities like independent preparation for tests and exams, the time for which is allocated in proportion to the labor intensity.

The workload of students is determined in accordance with the federal educational standard

As part of an internal independent assessment of the quality of education, monitoring of educational programmes is carried out, including an annual questionnaire survey of students to identify their satisfaction, including with the structure and content of the educational programme. Based on the questionnaire results the head of the department can make a decision to reallocate hours to different activities within the discipline.

The level of the study load for students exceeds the weekly norm of the study load of 54 hours recommended by psychologists and teachers. It is recommended to shorten the vacation time for the 1st, 2nd and 3rd years of study from 18 weeks to 7-10 weeks, thereby distributing the current study load among the weeks shortened from the vacation period.

4. Modules/Course Units and Mobility

Mobility is possible in all four programme study years. However, mobility is not recommended in the first year. No disciplines of the programme are considered “non-transferable”, with the except for a thesis defence. Although a thesis research and preparation of the thesis can be carried out as part of the exchange at another university, the defence of a thesis should be carried out at the Samara State Technical University.

The academic disciplines of the study programme are combined into the following modules:

- Module of general education, including humanitarian disciplines.
- Fundamental module, including mathematics, physics, computer science, general and inorganic chemistry.
- Basic module in the field of study, which includes all chemical disciplines of the programme.
- Module of project activities, including disciplines aimed at developing entrepreneurial skills and abilities.
- Compulsory field-oriented module, including field-specific chemical disciplines.
- Elective chemical disciplines.

The disciplines, both within the modules and in the programme as a whole, are consistently and in an interconnected manner allocated over the years of study in terms of gradual development, expansion and amplification of knowledge, skills and abilities in the process of forming all the planned competencies.

5. Methods of Teaching and Learning

The mentoring system is implemented through the institute of curators of academic groups. If there are problems, conflicts or students have negative emotions about the course, a student can tell it to his or her supervisor. Students are notified of the existence of the institute at the first organizational meeting. During the first year of studying a curatorial hour is held once a

month. The practice of real project activities is introduced and developed; also, online training is being introduced. The mentoring format of guiding project of student teams (project mentor), tutoring for project activities and mastering online courses is being used. Small group training is used in laboratory work on practical or theoretical disciplines, if this is required by the syllabus of a discipline, for example, when conducting business games. During the project module the students' command project work is being implemented. The allocation of a single day of project work in the university's schedule (once every two weeks) makes it possible to form project teams from students of various fields of study and years and levels of study (interdisciplinary project teams).

Problem-solving and discussion sessions on actual professional objectives to one extent or another, are implemented in all disciplines of the programme, as well as within the framework of project (research) work of students.

The university uses e-learning tools and distance learning systems. Access to educational electronic resources of the university is available to any computer with Internet access. Disciplines History, Law, Philosophy are implemented in a mixed format: a course of lectures is provided in an online format through a distance learning system based on the Moodle platform. The database of test and the automated computer testing system of SamSTU are used for online testing.

The bachelor's thesis is usually carried out in the form of a research paper to demonstrate competencies in the field of working with scientific and technical information, planning, and carrying out experimental work on the synthesis and identification of organic compounds, applying computational and experimental methods, processing experimental data, analyzing the results, preparing a manuscript for research work and presenting the results of the work. To carry out the practical part of the thesis, an industrial pre-diploma practice is carried out. Individual assignments for practice are given on the basis of the approved theme of the thesis.

The programme provides educational practice spread throughout semesters, which focuses on introducing and implementing team design work in accordance with the individual educational trajectory (6 credits), industrial technological practice, allocated in the summer, for practical training based on industrial partners (3 credits), industrial practice in the form of research work in a semester aimed to develop skills of independent work in the field of bioorganic chemistry (three credits), industrial pre-graduation practice (six credits). 18 credits are assigned for practical trainings, of which 12 ones are allocated for industrial practice.

The study programme is implemented using a wide variety of types and methods of educational activities: lectures, seminars, laboratory classes, practical trainings on solution of tasks, colloquia, individual consultations, tutorials, classes with the inclusion of business and role-playing games, team problem-solving activities, discussions, modeling real situations of professional activity, case methods, project work. The combined application of various educational technologies in teaching creates a sufficient basis for the formation of the competencies declared in the programme.

6. Assessment procedures and performance criteria

Examinations and pass-fail tests are held at the end of each semester in accordance with the curriculum.

State final examination at the study programme is carried out in the form of the defence of the thesis. That is stipulated by the decision of a chair implementing the study programme. The list of qualification tests is approved by the order of a Vice-Rector for Academic Affairs.

Oral and written examinations are used. For profession-oriented disciplines, oral examinations are predominantly used. Pass-fail tests can be passed based on the results of a student’s work during the semester. For the disciplines of the general education and fundamental module (1st and 2nd year), it is envisaged to use a cumulative system to assess learning

outcomes; when conducting examinations (pass-fail tests), the results of monitoring of current academic performance in the semester are taken into account.

When conducting the exam, depending on the scope of the discipline and the number of students, an additional 1-2 teachers might be involved as examiners. For oral exams, the minimum preparation time is 30 minutes. The overall examination time is no more than 4 hours, regardless of the form (oral / written). Students are provided with feedback in the form of correct answers. Written the assessment is a responsibility of the teacher. The syllabus of each discipline contains a list of questions for the examination, examples of questions, information about the form of the exam and the criteria for marks.

The test or exam can be conducted in full-time format or using distance education technologies, with the obligatory provision of student's identification.

Anonymous assessment is carried out in the case of passing an exam the form of automated computer testing.

Examination commissions are created for the second retake of the exam, in case of an unsatisfactory mark on completion and first try of re passing of an examination or a test.

Course works in “Organic chemistry” and “Bioorganic chemistry” are evaluated according to the results of the defense, for which a commission of leading teachers is created at the graduating department.

The principal chemistry disciplines end with an examination and contain an interim pass-fail test. The training programme is divided into several semesters. The discipline of crystal chemistry and elective chemical disciplines end with a pass-fail test with a grade. The procedures used to assess knowledge of specialised profession-oriented disciplines are typical for the study programmes in the field of study 04.03.01 Chemistry and allow to adequately evaluate the achievement of the planned learning outcomes.

7. Grading

In the Self-assessment report the question to grading was not understood well and was mixed with question of workload. University shall include the local to ECTS grading “translation” table in the Diploma Supplement and in results transfer documents of exchange students.

8. The Diploma Supplement

The Diploma Supplement is drawn up at the individual request of any university graduate on the letterhead of the Spanish company "Signe, S.A." in Russian and English, the application describes the level, status, content and results of the education received. In English, the document contains additional information about the holder of the diploma and his/her qualifications, as well as the content and learning outcomes in credits of the European Credit transfer and Accumulation System (ECTS).

The minimum document processing time is 10 working days. In case of a large number of requests, it can be extended up to 30 working days.

9. Quality Assurance

Internal quality assurance system includes:

- annual monitoring of educational programs in relation to the quality of training of students and resource provision for educational activities;
- assessment of students' satisfaction with the quality of education in relation to the educational program, organization of the educational process and conditions for extracurricular activities;
- assessment by students of the quality of teaching in individual disciplines.

- assessment of employers' satisfaction with the level of graduates' competencies development.

The formation of data, including the results of the questionnaire, is carried out in the automated information system "University". Specialized units summarize the results, provide them to the university leadership, heads of faculties, departments, heads of educational programs in the local information network of the university.

Based on the results of monitoring and questioning, taking into account the key areas of modernization of the educational activities of the university, changes are annually made, for instance: updating the content (excluding and introducing academic disciplines or their parts), reformatting educational activities. Since 2016, while maintaining the volume of fundamental training, the practical component has been strengthened: the module of project activities (team project work, elements of entrepreneurial education) has been introduced and expanded, and a workshop on the synthesis of organic compounds has been introduced.

The study programme is characterised by high information accessibility – information about the programme is available on the university's website and in students' personal accounts in the electronic information and educational environment.

The university has formed a multi-level system with the distribution of areas of responsibility, which allows to effectively manage the study programme quality. The quality management system includes:

- Educational Department, which functions include the following:

- full maintenance of learning and teaching documentation;
- technical support for the distribution of teaching load.

- Department for Cooperation with Industrial Partners, which is responsible for the following:

- analysis of the labour market demands;
- interaction with enterprises on the organisation of educational internships for students;
- participation in the implementation of regional and federal programmes and projects related to the cooperation of the university and external stakeholders;
- monitoring and career support for graduates.

- programme director analyses the programme, determines the tactics of the programme advancement and positioning its relevance and unique advantages in comparison with competitors.
- supervising chair develops learning and teaching documentation with the syllabi of the disciplines and curricula and distributes teaching load according to the programme.

Dean's Office of the Faculty of Chemical Engineering supervises students' compliance with the proper education rules, changes of students' status, and the compliance of a class schedule with the syllabi of the disciplines and curricula.

10. Employability

The topic of bachelor thesis's is mainly related to the scientific directions of the Department of Organic Chemistry, which are implemented within the framework of funded research projects. Level of graduates' knowledge allows them, after graduation, to work as a research chemist, analytical chemist, a specialist in quality control of chemical products, a specialist in working with analytical equipment, a manager of chemical and pharmaceutical companies, in the field of sales of chemical reagents and equipment, project management of chemical production, chemistry teacher in secondary education institutions.

The following number of the study programme graduates continue their studies at the masters programme Chemistry at the Samara State Technical University:

2020 – 70% of graduates;

2019 – 50% of graduates;

2018 – 37,5% of graduates.

90% of the study programme graduates are employed in their specialty within a maximum of one year after graduation, which indicates a high demand for graduates in relevant enterprises. More than 90% of graduates of 2019 and 2020 are employed in their specialty. Among the graduates of 2020, 10% are employed outside their specialty due to the starting their own business.

Based on the results of industrial practice at the enterprises of the region, a large number of graduates are employed:

10% among graduates of 2020 (low percentage is apparently associated with the coronavirus pandemic);

42% among graduates of 2019;

38% among graduates of 2018.

The proportion of graduates of 2020 working in the study programme specialisation outside the region is 0%; for graduates of 2019 it is 8,4%, and for graduates of 2018 it increases to 28,6%. The increase in the indicator for graduates of earlier years occurs as a result of the natural trans-regional staff mobility and demonstrates the demand for graduates of the study programme at specialised enterprises in other regions and their competitiveness in the labour market.

11. Ethical concern

Conscientious quotation is a requirement for the preparation of bachelor thesis in accordance with generally accepted ethical and legal norms. The fulfillment of this requirement is reflected in the supervisor’s review based on the results of checking the bachelor thesis for the amount of plarigarism, including the substantive identification of unauthorized borrowings.

In accordance with the University Regulations on the procedure for the state final assessment, the academic adviser check the graduate’s qualification work in the “Antiplagiat.vuz” system through the manager's personal account in the automated information system, and timely transfer the information about the results of checking the work for the presence of borrowings to the student. Also academic adviser is in charge of work placement in the automated information system. Checking the student's thesis for borrowings is carried out in accordance with the "Regulations on the use of the Antiplagiat software for checking manuscripts and written works." In accordance with these regulations, the manuscripts of dissertations and publications are tested.

Since the minimum requirements for participation in the competition for the position of a teacher or a university researcher include the mandatory presence of publications in journals with a non-zero impact factor, all employees are aware of the EuCheMS code of conduct and comply with its requirements.

12. Any other comments / information

The study programme has been implemented since 2014. Study begins 01 September each year.

In 2018 and 2019, at the Faculty of Chemical Engineering was conducted the All-Russian Chemical Dictation scientific and educational event.

The Samara Mendeleev School (SMS), a project of the Faculty of Chemical Engineering, which voluntary carries out training of talented schoolchildren of grades 8-11 for advanced study of separate branches of chemistry, conducts activities to prepare enrollees on the basis of the university. Enrollment to the School is based on the results of the admission testing, which determines the most prepared and enthusiastic candidates. In 2020, 83 schoolchildren of grades

9-11 were enrolled in the School. More than 50% of the SMS students enter the university after grade 11.

Persons seen

Discussion with representatives of the institution's leadership
The meeting with the administration of SamGTU took place on 12.04.2021 in Samara, Pervomayskaya Street, 18, main building, audience 200. The meeting began at 10.15. The meeting ended at 11:45.

1. *Iusupova O.V.* – Vice-Rector or Academic Affairs
2. *Zotova A.S.* – Vice-rector for international cooperation
3. *Kostyleva I.B.* – Counselor at the Rector's office of SamSTU
4. *Alontseva E.A.* – Head of Educational Department
5. *Smirnova S.B.* – Head of the Department for Work with Industrial Partners
6. *Malinovskaia I.A.* – Head of Development Coordination Departmen
7. *Prokofeva E.I.* – Head of the Department for Work with Foreign Students
8. *Safronov V.V.* – Dean of the Faculty of Chemistry and Technology (CTF)
9. *Nechaeva O.A.* – Director of the Institute of Oil and Gas Technologies (INGT)
10. *Novokshchenov S.G.* – Director of the Scientific and Technical Library
11. *Saushkin I.N.* – Head of Informatization and Telecommunications Department
12. *Vaskova E.N.* – Head of the Department for Educational and Social Work
13. *Gereikhanova E.E.* – Chairman of the Student Council
14. *Frank K.V.* – Chairman of the Student Union Committee
15. *Blatov V.A.* – Head of General and Inorganic Chemistry Chair
16. *Klimochkin I.N.* – Head of Organic Chemistry Chair
17. *Krasnykh E.L.* – Head of Technology of organic and petrochemical synthesis Chair
18. *Tupitsyna O.V.* – Head of Chemical Technology and Industrial Ecology Chair
19. *Tyshchenko V.A.* – Head of Chemical technology of oil and gas processing Chair
20. *Mashchenko Z.E.* – Head of the Monitoring Division of the Licensing and Accreditation of Educational Programs Department
21. *Frolov E.I.* – Deputy Dean for educational work of the Faculty of Chemistry and Technology
22. *Shurygina V.A.* – Deputy Dean for educational work of the Oil and Gas Technical University

Discussion with those responsible for the programme
Shadrikova Vera Andreevna – Associate Professor of the Organic Chemistry Department

Discussion with members of the teaching staff
1. *Ivleva Elena Aleksandrovna* – associate professor
2. *Klimochkin IUrii Nikolaevich* – professor
3. *Mankova Polina Anatolevna* – assistent
4. *Osipov Dmitrii Vladimirovich* – associate professor
5. *Osianin Vitalii Aleksandrovich* – professor
6. *Reznikov Aleksandr Nikolaevich* – professor
7. *Tkachenko Ilia Mikhailovich* – senior professor
8. *SHiriaev Andrei Konstantinovich* – professor
9. *SHiriaev Vadim Andreevich* – associate professor
10. *Rublinetskaia IUliia Viacheslavovna*
11. *KHorina Irina Veniaminovna* (video conference)

12. *Gridina Vera Valerevna (vide*o conference*)*
13. *Vilguta Oksana Feliksovna* (video conference)
14. *Bashkinova Elena Viktorovna* (video conference)
15. *Vinogradova Margarita Rudolfovna* (video conference)

Meeting with the students

1st-3rd year students:

1. *Anurev Ivan Aleksandrovich*
2. *Bogacheva Ekaterina Vitalevna*
3. *Borisenko Aleksei Vladimirovich*
4. *Gladarenko Vladislav Aleksandrovich*
5. *Deriugina Anastasiia Andreevna*
6. *Eskin Mikhail Mikhailovich*
7. *Kartuzova Polina Vitalevna*
8. *Krasavina Mariia Sergeevna*
9. *Lisina Marina Andreevna*
10. *Saveleva Daria Viktorovna*
11. *Sviridenko Iuliya Alekseevna*
12. *Sokova IAna Aleksandrovna*
13. *Startseva Kseniia Aleksandrovna*
14. *Feoktistova Mariia Denisovna*
15. *Shamshina Daria Ivanovna*

4th year students:

1. *Aleshina Daria Denisovna*
2. *Ivanova IUliia Fedorovna*
3. *Karpeev Danila Alekseevich*
4. *Mistishova Ekaterina IUrevna*
5. *Ulianova Ekaterina Pavlovna*
6. *Khamzina Mariia Rashadovna*
7. *Khatmullina IUliia Eduardovna*
8. *Shishkina Milena Sergeevna*
9. *Shumkova Aleksandra Sergeevna*

Subjects discussed during the site visit

1. Representatives of institution's leadership

Olga Viktorovna Yusupova, Vice-Rector for Academic Affairs, presented basic information about the university. The Samara State Technical University occupies a leading position in the region in the education field, in 2016 it has received the status of a flagship university. The university's quality management system concerning the activities in the field of higher education, research and development is certified for compliance with the requirements of ISO 9001-2015. The university is involved in the implementation of strategic projects aimed at solving the problems of stable social and economic development of the region. The university's policy in the field of quality is aimed at flexibility, diversity and continuous improvement of the content and forms of education, allowing to satisfy demands of consumers as much as possible.

At the university, high-quality training of students is provided through the effective combination of the educational process with research activities. Involvement in these types of activities is a mandatory element of the incentive system for the academic teaching staff. The university implements information transparency in interaction with enrollees, students, potential employers and other concerned parties. Through constant monitoring, analysis and evaluation of processes and activities, the university seeks to meet and exceed the requirements and expectations of consumers for performance results. This self-assessment improvement process is constant.

Anna Sergeevna Zotova, Vice-Rector for International Cooperation, noted the important status of the Faculty of Chemical Engineering in the university's structure, which is confirmed by high performance indicators. The faculty implements bachelor's, specialist's and master's programmes. Educational activities are provided with the required material and technical resources and information assets. Each student has access to the automated information system, which contains information about the educational activities and personal learning outcomes, as well as teaching and learning materials and library databases. Students participate in assessing the quality of the educational process and determining the content of the study programme. Feedback is carried out through an annual questionnaire survey: to identify satisfaction with the education quality (quality of the study programme, quality of training conditions and its organisation, quality of conditions for extracurricular activities), to assess the quality of teaching (a teacher through the eyes of students) implemented as part of various educational projects (feedback based on the results of projects).

Interaction with students within the framework of mentoring (supervision, tutoring) is an effective tool for obtaining feedback. The activities of socially active students are organised in the form of student self-governance. The university has the Student Trade Union Organisation and the Student Council, at meetings of which topical issues affecting the interests of students are discussed. Representatives of the Trade Union Organisation and the Student Councils take part in the work of the academic councils of faculties, Academic Council of the University and scholarship committees, as well as in considering issues on the allotment of trip tickets to recreation camps and sanatorium-preventorium. Student Council and Student Trade Union Organisation are also available at the faculty.

There exist more than 40 sports clubs in 24 areas of sport at the university. The university possesses a multifunctional sports complex and a swimming pool. Tours to the sports and recreation camp "Politekhnik" are organised for students. The camp operates all year round, has a ski depot, an open-air pool in the summer, playgrounds for volleyball, badminton and table tennis. In the summertime, the "Stroitel" lodge functions, located on the banks of the Volga River. The university's students are given the opportunity to practice dancing, singing, choral

singing, theatrical performances, playing musical instruments and foreign languages outside the study time.

More than 2000 students receive financial assistance annually. Students living in cities and towns of the Samara region possess the right to social support for financing transportation by transport of suburban and interurban intraregional connection. It is carried out using the funds of the regional budget in the amount of 50% of travel costs for eight trips per month during the academic year. For students who do not receive bursary, but find themselves in a difficult life situation, there is an opportunity to receive free meal tickets in the university's canteens, out of the funds obtained from income-generating activities.

The university has established the Department for Cooperation with Industrial Partners, which is responsible for the organisation of information and consultation work with students regarding the choice of a career path, writing a resume and searching for vacancies. Within the framework of the Department's activities, tutorials and consultations on employment and resume writing are carried out for students, both with the participation of invited speakers and in the process of ongoing work with students and graduates who have applied for consultation.

2. Persons responsible for the programme

The faculty has established a multi-level system of cooperation with employers. The first cooperation channel is historically established one. Graduates of the faculty hold most senior positions in industrial enterprises of the region and are well aware of the education high quality. The second cooperation channel is implemented with the participation of the Department for Cooperation with Industrial Partners. The Department for Cooperation with Industrial Partners monitors the labour market and new requests from employers to formulate an adequate response in the form of updating the study programme. A common option for employers' participation in the educational process is conducting master classes and field-oriented lectures for students.

On his own initiative, a student can make choice of undergoing industrial practice at the enterprise, even during a period that does not correspond to the curriculum. In this case, the formation of a personal curriculum is allowed for such students.

Students are engaged in project activities during the educational process in their 1st to 4th years. There are assigned Tuesdays in the curriculum for students to engage in scientific work as part of the preparation of course works and thesis.

In the study programme module in organic chemistry, there are two forms of interim assessment – an examination with a grade and a course work with a grade. An examination necessarily involves writtten and oral part. The writtten part makes up about 50% of the examination content and includes tasks for solving synthetic schemes. The oral part of the examination also makes up about 50% of the examination content and involves communication with the examiner on a theoretical issue. The oral part of an examination makes it possible to assess the level of a student's training, including the correspondence of the solution in the written part to the knowledge shown in the oral part.

A course work also includes two parts, practical and theoretical. The practical part contains a task on the synthesis of substances according to known methods. The theoretical part involves a review of the literature on this issue. A course work prepares students for writing the thesis, which consists of the same parts as a course work, but of a larger content. A course work ends with the defence of the topic.

Internal assessment of the education quality at the university is carried out in several ways. A system of reciprocal visiting of classes by teachers is practiced at the chair. Academic methodological councils of the faculty and the university have been organised for reviewing the funds of assessment tools of the study programmes. The editorial and publishing department at the university's library reviews all printed learning and teaching publications issued as part of the programme.

Situations occasionally arise, when a student cannot cope with the programme study load. In this case, the programme director tries to offer him a transfer to another university's study programme in order to avoid his expulsion from the university.

3. Members of the teaching staff

To interact with students, teachers actively use up-to-date means of communication, including social networks, for example, Vkontakte. For additional analysis of information with underachieving students, teachers appoint extra time for additional consultations on the subject.

If a teacher has difficulties in preparing a syllabus for a subject, it is common practice to seek advice and help from senior, more experienced colleagues at the chair. Often a commission consisting of senior colleagues attends the classes of young teachers in order to conduct an audit and give them recommendations for improvement.

The university has an advanced incentive system of teachers' activities. Achievements in the educational, learning and teaching, scientific and extracurricular work of each teacher are taken into account. Based on these achievements, a rating is formed for three categories of teachers: assistants, associate professors and professors. The rating results are taken into account in the competitive selection for filling vacancies. That is, the higher the teacher's rating, the better chances he has to achieve higher position. For writing articles for top-rated periodicals, teachers obtain incentive payments for the authors team.

When assessing the factors that determine their career choice, teachers point out the freer and flexible work schedule, as well as the ability to independently plan and set goals in their teaching and scientific work.

Teachers participate in the study programme development by the way of collegiate work under the guidance of the programme director and the head of the chair supervising the programme. Discussion of labour issues on educational activities takes place at monthly meetings of the chair.

To improve their qualifications, teachers compulsorily undergo advanced training at the university every three years and organise internships at other universities, for example, at the Volgograd State Technical University. In addition, as part of the implementation of grants, teachers participate in scientific conferences in Russia and abroad, as well as have the opportunity to pursue a research degree and defend dissertations in the dissertation council at the Faculty of Chemical Engineering.

All teachers participate in the scientific work of the chair and supervise students' scientific work for the preparation of course works and theses. Most of the students of junior years independently choose an interesting topic of a scientific work and bind to the teacher in charge of the corresponding area. If students have not made a choice before the 3rd year, then the topics of the thesis is distributed among them in a random order. Topics of theses are determined by the topics of the scientific work of a chair in accordance with the research grants that are implemented at the university. On rare occasions, students may complete their thesis on a topic suggested by an employer's organisation. This topic can be carried out both in the laboratories of a chair, and at the premises of the initiator organisation. When preparing thesis, students are encouraged to publish scientific articles on their scientific topic in the form of providing them with preferences for admission to the masters' degree programme.

Teachers note a powerful instrumental foundation for conducting research, the ability to publish articles in the international top-rated scientific periodicals and receive grants as the positive aspects of their work. A complicated and overloaded workflow system for supporting educational and scientific activities was noted as development zone.

4. Discussion with students

From the very beginning of training, an individual curator from the teachers is assigned for each group. The curator helps students in solving all possible problems that arise during their training. In the event of disputable or conflict situations that students may have with a teacher, all interactions are carried out via the student's group leader. The leader appoints a meeting of students with the teacher and the curator of the group, at which the controversial issue is resolved collectively.

Students confidently argue that the university provides equal learning opportunities for everyone, regardless of religion, political opinions and gender identity.

Students can influence the content of the study programme. To this end, before the beginning of each semester, an open-type survey is conducted, with the help of which it is possible to choose subjects for study in addition to the main programme. In preparation for the survey, students receive a summary of the subjects to choose for consideration. After the end of the semester, a survey of students is carried out to receive feedback on the study programme content.

For cooperation with employers, the university arranges meetings of students with representatives of enterprises, at which the activity field and requirements for employees are discussed. During the industrial practice, students are invited to the enterprises of future employers (companies Ozon LLC and Rosneft were named as the most popular among students).

Students chose Samara State Technical University based on the information received at the open day and on the feedback from other students. At the same time, all students confirm that their expectations from the education on the programme have been met. Students speak very favourably about the university's teaching staff.

Students have access to the international chemistry databases (Reaxys) and databases of the publications for fulfillment of course works, preparation of the thesis and for scientific activities. Access is organised through a student's personal account in the university's information system.

To arrange students' leisure time, the student cameo theater, volunteer movement, student council, and tourist trips are organise at the university. Students take part in career guidance work – they hold meetings with school students, where they talk about the educational process and student life at the university.