SUMMARY REPORT

On joint international accreditation of the Bachelor Study Programme

«Chemistry»

delivered by East China University of Science and Technology (People's Republic of China)

2018

While preparing this Summary Report we used information from the Self-Evaluation Report and the Final Report on the External Review of the bachelor study programme "Chemistry" delivered by East China University of Science and Technology (People's Republic of China).
The presentation document for the use by the National Accreditation Board.

СОДЕРЖАНИЕ

GENERAL INFORMATION ON EDUCATIONAL INSTITUTION

Full name of the educational institution	*East China University of Science and Technology*
Founders	*Ministry of Education of the People's Republic of China*
Year of foundation	*1952 – East China Institute of Chemical Technology* *1993 – East China Polytechnic University*
Location	*130 Meilong Road, Shanghai, 200237，P. R. China 130*
President	*Qu Jingping, Doctor of Sciences, Professor, Deputy General Secretary of the Communist Party, East China University of Science and Technology Committee*
Number of students	*25000*
	Bachelor students *15808*
	Master students *9379*
	Post graduate students *1755*
	Foreign students *1358*

EAST CHINA UNIVERSITY OF SCIENCE AND TECHNOLOGY

East China University of Science and Technology was officially founded in 1952 after merging of Chemical Engineering or Chemistry Departments, from then the most famous five universities in China. It was initially named East China Institute of Chemical Technology and was changed to ECUST in 1993, which is the first University with mainly chemical industry oriented in China. In 1956 it was one of the first Universities to start post-graduate programmes, and in 1960 it became the key University commended by the Central Committee of the Chinese Communist Party. Since 1996 the University has been a participant of the «Project 211» programme. This is a state programme targeted at advancing 100 Chinese Universities to the world level. In 2000 the Master programmes of East China University of Science and Technology were accredited by the Ministry of Education of China and in 2008 it became the key University listed in the innovation platform of «Project 985» (the project on the development of the Chinese system of higher education, whose aim is to launch at the international level a few leading Chinese Universities with the support of local governments). Half a century of reforming and construction later the University has become a key multidisciplinary national University.

Now, ECUST, with the total area of 2653 acres, consists of three campuses: Xuhui, Fengxian and Jinshan Sci-Tech Park. The teaching activities are conducted mainly in the first two campuses. ECUST has 15 academic schools and 6 non-academic faculties. The University is specializing in Science, Technology, Agriculture, Medicine, Law, Management, Philosophy, Economics, Literature, History and Education and 11 other fields. The University delivers 51 Bachelor programmes, 121 Masters programmes and 11 post-graduate programmes. Besides, students are trained in MBA, Public Administration, Social Work and 18 fields of Engineering.

There are over 25000 full-time students: 9379 Master students and 15808 Bachelor students. The number of faculty and staff members has reached 3,700, among them there are about 1,000 associate professors and professors.

ECUST actively promotes international cooperation and ties. The University has established long-term cooperation with 70 Universities, companies and research institutes. Many leading research Universities have bilateral agreements on cooperation, which helps conducting joint trainings and promotes teacher and student exchange.

There has been a notable growth in the student admission. At present over 1300 foreign students from over 50 countries are studying at the University. ECUST is in 28 place in the national Top Chinese University Ranking.

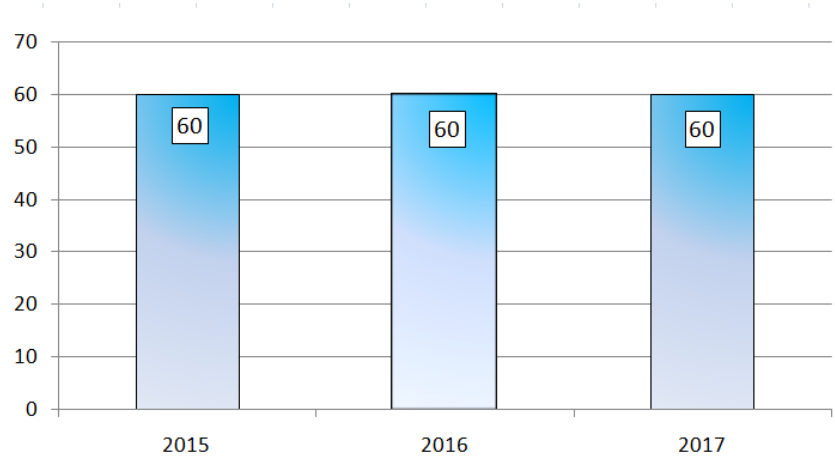
The School of Chemistry and Molecular Engineering was founded in 2007. The educational objectives for the undergraduate program in

Chemistry is to cultivate students with a solid natural science foundation and good humanistic qualities, to help students master basic knowledge, theory, and practical skills of Chemical Science, and to obtain certain research and practical abilities. In recent years the School of Chemistry and Molecular Engineering has been actively developing international cooperation in the sphere of student and teacher mobility. There are student exchange programmes, visiting lecturers from foreign Universities. The School maintains close links with leading Universities of the USA, Britain, Japan, France and others.

INFORMATION ON THE EDUCATIONAL PROGRAMMES UNDERGOING ACCREDITATION

Educational programmes	*Chemistry*
Level of training /Standard period of Training	*Bachelor / 4 years*
Structural subdivisions	*School of Chemistry and Molecular Engineering*
Major departments	*Department of Chemistry*
Date of the site visit	*May 21-24, 2018*
Person responsible for public accreditation of the study programmes	*Honglai Liu, Doctor of Sciences, Professor, Director School of Chemistry and Molecular Engineering*

REFERENCE DATA ON STUDENT ENROLLMENT FOR PROGRAMME «CHEMISTRY»



ACHIEVEMENTS OF THE STUDY PROGRAMME

Teaching Staff

There are 35 full-time teachers who train students in the Bachelor programme "Chemistry" (12 professors and 13 associate professors). 74% of the staff are Ph.D. degree holders. The qualifications of the teachers ensure high level of education and training. The teaching staff have basic education in Organic, Inorganic, Physical Chemistry, Analytical Chemistry, Applied Chemistry, Chemical Technology, Pharmaceutics, Materials Science and others.

There are high-level talented persons in the teaching staff, including, distinguished professors in Cheung Kong Scholars and founders of the National Outstanding Youth Science Foundation.

Employability of graduates

The graduates of the study programme are very competitive in the labor market not only in China but worldwide. The primary employment rates of Chemistry graduates in recent years have always been 100%.

40% of graduates are employed in national and international HEIs and continue with their research work. 60 % of graduates are employed by large companies in the fields of chemical industry, environment, pharmaceutics, food manufacturing industry, customs and transportation.

Teaching and learning resources

The rooms for teaching and learning are equipped with the account of modern requirements and are suitable for all kinds of theoretical, practical, laboratory and research work of students. The School of Chemistry and Molecular Engineering has in place a state-of-the-art demonstration centre for doing experiments, including virtual experiments for the Chemical Industry of the country. The total floor space used by the study programme "Chemistry" is 12 000 m2, including basic chemical experiment laboratories (7000 m2), laboratories for instrumental analysis (2500 м2), laboratories for chemical biology (2000 м2) and biomedical chemistry (500 м2). Over $46 000 are allocated annually for maintaining and upgrading the material and technical resources.

There is a modern scientific library with the total fund of over 3million copies of research, learning, methodological and fiction books.

Academic mobility of students.

ECUST is actively developing academic exchange programmes with foreign Universities. Bilateral agreements have been signed with leading Universities of Britain, USA, Japan and France on developing double degree programmes. The objective of these programmes is to create an international study environment, develop the concept of international education, implement international training programs, and construct an

international education system, so as to train the versatile international talents that meet the demands of social development. Nearly 100 students in total attend the above mentioned international programs with joint degrees each year. ECUST regularly holds international conferences, inviting world famous experts and scholars to give talks at ECUST, and sponsoring undergraduates to attend international

conferences as well as summer or winter schools. Every summer and winter vacation, the School of Chemistry and Molecular Engineering organizes a short trip for its undergraduate students to visit international famous Universities, including the National University of Singapore (NUS) and the Nanyang Technological University (NTU) in Singapore, the Ewha Woman University (EWU) in South Korea, the Osaka Prefecture University (JOPC) and the Kyushu University (KU) in Japan, etc. Continuous development of international cooperation facilitates recognition of ECUST by the international community.

International projects.

In terms of international exchanges, ECUST has always been committed

to cooperation and exchanges with famous foreign universities, companies and organizations. By now, agreements on cooperation and exchange have been concluded with 11 foreign universities and institutes such as Queen University of Belfast (UK), University of Akron (USA), Claude Bernard Lyon I University (France), FGL of the French

Engineering Union (France) and Osaka Prefecture University (Japan). ECUST has agreements on cooperation with 7 largest research institutes and companies of PRC. Shanghai Petrochemical Corporation and Shanghai Institute of Chemical Engineering are the main internship bases for the students.

EXTERNAL REVIEW PANEL

SUN Dongbai (China)

Chair

Doctor of Sciences, Professor, Executive Vice President, Sun Yat-sen University

Nominated by Higher Education Evaluation Center of the Ministry of Education (HEEC), China

ZHANG Shuyong (China)

Panel member

Doctor of Sciences, Professor, Deputy Dean for Students' Affairs, Shandong University

Nominated by Higher Education Evaluation Center of the Ministry of Education (HEEC), China

YANG Guangming (China)

Panel member

Doctor of Sciences, Professor, Secretary of the Party Committee of the Communist Party, Nankai Univeristy

Nominated by Higher Education Evaluation Center of the Ministry of Education (HEEC), China

HU Jiming (China)

Panel member

Doctor of Sciences, Professor, Director for Academic Affairs, Zhejiang University

Nominated by Higher Education Evaluation Center of the Ministry of Education (HEEC), China

Alexander Knyazev (Russia)

Panel member

Doctor of Chemistry, Professor, Dean of the Faculty of Chemistry, Lobachevsky State University of Nizhny Novgorod

Nominated by the Guild of Experts in Higher Education

Aleksy Yimoshkin (Russia)

Panel member

Candidate of Chemical Sciences, Associate Professor, Head of the Department for General and Inorganic Chemistry, Saint Petersburg State University

Nominated by the Guild of Experts in Higher Education

HUA Wei (China)

Panel member, representative of the professional community

Deputy Director, SINOPEC Beijing Yanshan Company

Nominated by Higher Education Evaluation Center of the Ministry of Education (HEEC), China

HE Guoliang (China)

Panel member, representative of the professional community

Chief Engineer, COFCO

Nominated by Higher Education Evaluation Center of the Ministry of Education (HEEC), China

INFORMATION ON THE LEADING TEACHERS OF THE EDUCATION PROGRAMME

Wu Xinyan,

Prof. PhD., Member of Ministry of Education's New Century/Transcentury Talents

Liu Honglai,

Prof. PhD., Professor Responsible for Chemistry Major, Distinguished Professors in Cheung Kong Scholars

He Tian,

Professor, Vice President of Chinese Chemical Society, Academician of Chinese Academy of Science, Academician of the World Academy of Sciences (TWAS), Cheung Kong Distinguished Professor

Xu Shouhong,

Prof. PhD., Vice Dean

Luo Qianfu,

Prof. PhD., Deputy director of Chemistry Department.

Wenqing Zhang

Doctor of Sciences, professor, Head of Chemistry Department; visiting lecturer, Rice University (USA)

Yongjia SHEN,

Ph.D., Professor, Vice director of the committee of Engineering Education Accreditation for Chemical and Pharmaceutical Engineering

Liming WANG,

Prof. PhD., Dean of the department of Fine Chemicals

Ying Hu,

Professor, PhD., Academician of Chinese Academy of Science

Jinlong Zhang

Doctor of Sciences, professor, Deputy Director, School of Chemistry and Molecular Engineering, member of the research community of Osaka Prefecture University (Japan)

Weihong ZHU

Prof. PhD., Full professor and deputy director of the Institute of Fine Chemicals

Xiang MA

Professor, PhD., National Science Fund for Excellent Youth Scholars of China Deputy Director of Institute of Fine Chemicals, National Science Fund for Excellent Youth Scholars of China

COMPLIANCE OF THE EXTERNAL REVIEW OUTCOMES WITH THE STANDARDS

Standard 1. Goals and objectives of the study programme

Compliance with the standard: **full compliance**

Good practice

The goals and objectives of the study programme correspond to the mission of the University, educational strategy of national and regional innovative development, and the strategy of the People's Republic of China and take into consideration the requirements of the modern labour market and society.

The study programme is practically oriented.

The University has in place an effective feedback system for students, teachers and graduates for assessing the implementation of the programme's goals.

Visiting lecturers from leading Chinese companies and research institutions, and also prominent teachers and scientists (there are Nobel prize winners in Chemistry among them) are regularly invited to present in order to enhance the level of the study programme (over 30 lectures in a year).

The state funding of the University's research work is sufficient. Over 45 million dollars has been allocated in 5 years for developing research.

Areas for improvement

It is recommended that regular meetings with employers and graduates should be conducted in order to make adjustments to the programme's educational goals.

Standard 2. Learning outcomes

Compliance with the standard: **full compliance**

Good practice

Expected learning outcomes fully correspond to the goals of the the study programme.

The graduates of the programme are in high demand on the labour market. The graduates are highly competitive and 100 per cent employed. They easily adapt to new labour conditions and are motivated to continue with on-the-job training and education. The employers are highly satisfied with the quality of the programme's graduates (97 %).

Areas for improvement

1. The focus should be shifted to interactive teaching forms (seminars, in particular). The number of problem solving tasks in the

modules with their subsequent discussion at the seminars should be increased.

2. In order to improve communicative competence the English language courses should be offered on a regular basis.

3. It is recommended that the students should have more encouragement and support in their effort to participate in and present at international student conferences.

Standard 3. Curriculum

Compliance with the standard: **full compliance**

Good practice

Availability of a comprehensive system of regular review of curriculum with the purpose of its updating and enhancing.

An effective system of teaching and learning assessment is in place, including regular student surveys.

The School of Chemistry and Molecular Engineering has sufficient and adequate facilities for professional development of young teachers with a possibility of training and certification.

There are annual contests and competitions which serve as an incentive for young teachers and enhance the study programme.

Areas for improvement

1. Student attendance should not be used as an indicator of student achievements. Points for student achievements should only be awarded for active participation in solving problems and discussions in class.

2. Syllabi should be updated with emphasis on modern trends and methods used in Chemistry (e.g., replace manual titration by automatic).

Standard 4. Faculty

Compliance with the standard: **full compliance**

Good practice

A well-balanced teaching staff, which is mainly represented by young and middle-age teachers. The teachers are very enthusiastic and are highly regarded by students and graduates.

The qualification of the teaching staff is high and the major part of the teachers has work experience in the field of Chemistry. There are teacher working groups in major disciplines that regularly discuss the issues of teaching, education, training and support of students.

The teachers develop and use modern technologies in teaching, in particular, problem-oriented on-line courses.

Areas for improvement

More favourable conditions should be created for being promoted to professorship for the teachers who are more oriented towards teaching than research.

Standard 5. Teaching and learning resources

Compliance with the standard: **full compliance**

Good practice

The study programme is sufficiently funded for effective development. There is a modern campus for 1st-3d year students fitted with experimental laboratories and state-of-the-art equipment (NMR Spectrometer, LC/MS, GC/MS, Gel Chromatographs, X-ray diffractometers, etc).

Information resources in Chemistry are sufficient for the programme implementation and accessible to students and teachers.

The University research library is stocked with over 3 million copies of research, teaching and learning, and fiction books.

Areas for improvement

1. It is recommended that the interaction between undergraduates and graduate students should be strengthened by way of conducting joint research seminars and joint research work.
2. New practice bases should be established especially in the top 500 companies of Shanghai.
3. A list of graduation theses should be compiled.

Standard 6. Quality assurance

Compliance with the standard: **full compliance**

Good practice

An effective system for transition from secondary school to the University level education has been developed and successfully used.

Availability of a feedback mechanism from teachers, students, alumni and employers in the questionnaire format.

An effective feedback system of assessing classes and making timely correction in the study programme.

Areas for improvement

It is necessary that students should form the competence of expressing independent opinion.

Standard 7. Student development

Compliance with the standard: **full compliance**

Good practice

Systemic career guidance work, recruiting and support of talented young people with the incentive of enhanced academic scholarship.

Employer satisfaction with the quality of the study programme implementation and the quality of graduates' education and training.

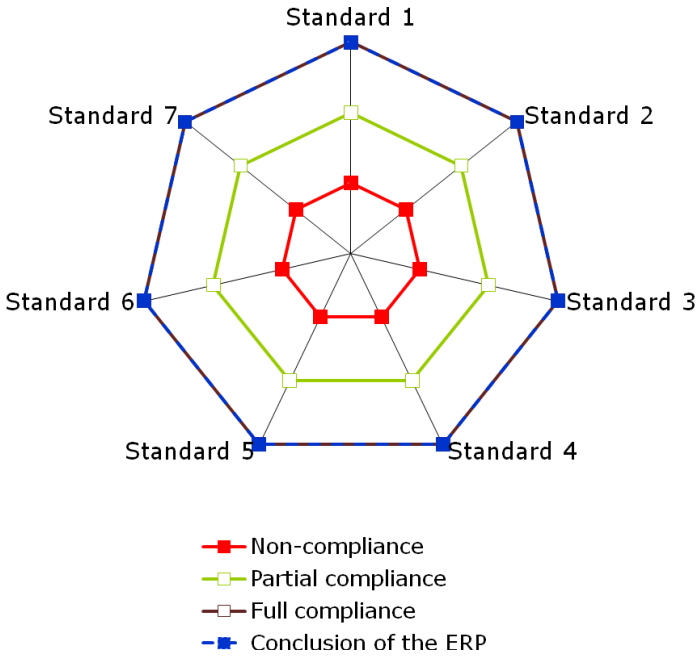
Effective system of psychological support which helps to identify and rectify emerging psychological problems.

Cooperation with leading international Universities in developing double degree programmes. Bilateral agreements have been signed with the University of Edinburgh (Scotland), the Queen's University of Belfast (UK), the University of Akron (USA), the Claude Bernard University (France), the Osaka Prefecture University (Japan), etc.

Areas for improvement

Quantitative methods of assessment of student innovation activity should be developed.

DISTRIBUTION DIGRAM OF THE EXTERNAL REVIEW OUTCOMES



Standard 1. Goals and objectives of the study programme
Standard 2. Learning outcomes
Standard 3. Curriculum
Standard 4. Faculty
Standard 5. Teaching and learning resources
Standard 6. Quality assurance
Standard 7. Student development

CONCLUSION OF THE EXTERNAL REVIEW PANEL

Based on the self-evaluation report analysis, documents and data submitted, the External Review Panel came to the conclusion that the Bachelor educational programme "Chemistry" delivered by East China University of Science and Technology (People's Republic of China) **fully** complies with the standards and criteria of public accreditation of the National Centre for Public Accreditation and Higher Education Evaluation Center of the Ministry of Education (HEEC),

The External Review Panel recommends that the National Accreditation Board **accredit the Bachelor educational programme "Chemistry" delivered by East China University of Science and Technology (People's Republic of China) for the period of 6 years.**

SCHEDULE OF THE SITE VISIT OF THE EXTERNAL REVIEW PANEL

Date	Time	Event
May 21th, Monday	16:00 -17:30	Preliminary meeting of external review panel
May 22, Tuesday	8:30-9:30	Meeting with the ECUST administration and staff members responsible for accreditation
	9:30-12:00	Site-visiting, attending classes, interviewing, etc. independently
	12:10-13:00	Lunch
	14:00-17:30	Meetings, interviews
	18:00-19:00	Dinner
	19:30-20:30	Internal meeting of ERP
May23, Wednesday	8:30-9:30	Excursion to campus
	9:30-11:00	Site-visiting, attending classes, interviewing, etc. independently
	11:00-11:40	Lunch
	12:30-15:30	Meetings, interviews
	15:30-17:00	Internal meeting of ERP
	17:30-18:30	Dinner
	19:30-21:00	Internal meeting of ERP
May 24, Thursday	9:00-11:00	Feedback and closing meeting of the accreditation with ECUST representatives
	12:00-13:30	Lunch
	14:00	Departure of ERP