

The curriculum
 at the
 School of Doctor of Molecular Biology and Biological Chemistry
 conducted by the **Institute of Biochemistry and Biophysics**,
 in the field of science and science disciplines:

1: Biological Sciences

2: Chemical sciences

Course name	Form of classes	Classes time duration	Form of credit	Learning outcome ¹
Lectures in the discipline ² biological sciences or chemical sciences	series of lectures	30h	exam	W01, W02, W05, U01, U02, U03, K01, K02, K03, K09, K10,
Interdisciplinary lectures ²	series of lectures	15h	pass	W01, W02, W05, U01, U03, K01, K02, K03, K09, K10,
Statistical methods in experimental sciences	lectures /exercises	15h	pass	W06, U04, U07, K03, K04, K05
Training in: ✓ fundraising for research ✓ commercialization of research results ✓ legal aspects of the research ✓ career paths - formal and customary aspects ✓ popularizing knowledge and media communication	series of lectures / workshops	15h	Credit and submission of a mini-grant; it is recommended to prepare an application for an external competition (e.g. NCN, NAWA) in agreement with the supervisor ³	W04, W07, W08, W09, U03, U04, U05, U07, K01, K02, K04, K05, K06, K07

Philosophy of science	cycle lectures	30h	pass	W01, U01, K01, K03
Ethical aspects (including scientific honesty) in scientific research	series of lectures	5h	pass	W01, U01, K01, K03
English language ⁴	language course	120h (4 semesters)	pass	W05, U04, U05, K01
OHS training ⁵		2h		K08
Doctoral Institute seminars ⁶ and Institute Seminars ⁷	series of seminars	50h	pass	W01, W02, W03, U01, U03, U04, U06, U07, K01, K02, K03, K04, K09, K10
Reporting session ^{8th}	symposium	6h x 2		W01, W02, W05 U01, U02, U04 K01, K03

The program covers 180 hours of compulsory classes, including 65 hours of optional classes and additionally English language course (at least four semesters) for doctoral students with lower than B2 linguistic competences.

It is recommended that the curriculum of classes be implemented during the first three years of education at the Doctoral School.

The curriculum at the Doctoral School includes didactic classes. It does not include the total time allocated to the implementation of the doctoral dissertation. The duration of the research and scientific work required to complete the doctoral dissertation is agreed with the doctoral student by the supervisor.

¹ Learning outcomes achieved as a result of the course. A detailed description of the effects denoted by symbols can be found in Appendix 1 to the Doctoral School Training Program.

² A doctoral student is required to pass (exam) 30 hours of obligatory lectures for the discipline in which the doctoral dissertation is realized and 15 hours (credit) of optional lectures from a chosen discipline other than the one in which the doctoral dissertation is realized or interdisciplinary lectures. Upon agreement with the dissertation supervisor, the doctoral student may choose lectures conducted in scientific units other than IBB PAN.

³ To the prepared application for funding, the doctoral student attaches the opinion of the promoter, sample attached - Appendix No. 2.

⁴ The lectureship is compulsory for doctoral students who score less than or equal to 60% in the language competency test organized by the School. The test takes place during the first three months of training at the School. Doctoral students who are citizens of countries where English is the main official language, graduates of universities in countries where English is the main official language, and those who have a certificate certifying English proficiency of at least B2 are exempt from the test. A list of certificates certifying English proficiency at the required level is given in Appendix 3.

⁵ Occupational health and safety training takes place during the first three months of training at the Doctoral School. Stationary health and safety training is conducted by the supervisor or a designated person before the start of the experiments planned in the project.

⁶ The doctoral student is required to attend (min. 50% attendance) the Doctoral Institute Seminars as a student for min. 2 years, as well as to prepare one presentation of his/her own results (after the mid-term evaluation). It is recommended to attend seminars during the entire training period.

⁷ A doctoral student is required to attend (min. 25% attendance) an Institute seminar as a listener for min. 2 years. It is recommended to attend seminars during the entire training period.

⁸ A doctoral student is required to participate two times, including at least one presentation of his own results at the annual doctoral student reporting session (in the second or third year) during the period of training at the Doctoral School.

Appendix 1 to the Education Program at the Doctoral School of
Molecular Biology
and Biological Chemistry

Learning outcomes
in
the School of Doctor of Molecular Biology and Biological Chemistry
Profile BIOL-CHEM

run by the **Institute of Biochemistry and Biophysics of the Polish Academy of Sciences,**

in the field of exact and natural sciences in the disciplines:

1: Biological Sciences

2: Chemical Sciences

The implementation of the program of the Doctoral School of Molecular Biology and Biological Chemistry prepares for scientific and research work by achieving the learning outcomes assigned to level 8 of the Polish Qualifications Framework (*Act of 22 December 2015 on the Integrated Qualifications System*) in the scope of:

1. general knowledge in the disciplines of biological and chemical sciences;
2. knowledge at an advanced level, of a detailed nature, corresponding to the area of scientific research in a given discipline and in interdisciplinary research;
3. social competences in the field of scientific and research work and the social role of a scientist.

The description of learning outcomes in terms of knowledge (W), skills (U) and social competences (K) is presented in the table:

A description of the learning outcomes in terms of knowledge (W), skills (U) and social competence (K) is provided in the table:

LEARNING OUTCOMES		
Symbol for the learning outcome	Description of the learning outcome	Reference to the 8th level of Polish Qualification Framework
WIEDZA		
W01	Has extensive general knowledge of the chosen scientific discipline (biological sciences or chemical sciences).	P8S_WG
W02	Has precise knowledge related to the area of research conducted, taking into account the latest scientific reports.	P8S_WG
W03	Has detailed knowledge of research techniques and research methodology in the chosen scientific discipline.	P8S_WG
W04	Has knowledge of the acquisition of scientific information.	P8S_WG
W05	Has a detailed knowledge of professional academic vocabulary in the area of research conducted in the native language and English.	P8S_WG
W06	Has a basic knowledge of the methods of statistical data analysis and detailed knowledge of the statistical tools used in the analysis of its own results	P8S_WG
W07	Has knowledge of fundraising for research.	P8S_WK
W08	Is aware of the principles concerning the integrity of scientific research and the publication of results.	P8S_WK

W09	S/he is familiar with the ethics of medical research involving human beings and human tissues and the humane handling of laboratory animals.	P8S_WK
W10	S/he is familiar with the rules for the conduct of doctoral dissertations in universities and research institutes.	P8S_WK
SKILLS		
U01	S/he is able to formulate a research problem and identify research methods to solve it.	P8S_UW
U02	S/he has an outstanding command of research in the area of his/her own research.	P8S_UW
U03	S/he is able to acquire scientific information and assess the relevance of recent scientific reports in the biological and chemical sciences discipline in the context of his/her own research.	P8S_UW
U04	S/he is able to present the results of the research work in the form of a publication, conference report or multimedia presentation, analyse and critically discuss them in Polish and English.	P8S_UK
U05	S/he is able to correctly prepare an application for research funding for young researchers.	P8S_UW
U06	S/he is able to teach using up-to-date knowledge and teaching methods.	P8S_UU
U07	S/he is able, under the supervision of the supervisor or supervisor and assistant supervisor, to prepare a dissertation and to present its main ideas during the public defence.	P8S_UO
SOCIAL COMPETENCES		

K01	S/he is aware of the significant role of the scientist and researcher in the development of the biological and chemical sciences for the well-being of societies and the enhancement of their quality of life.	P8S_KK
K02	S/he is skilled in thinking and acting in a creative and entrepreneurial manner, creating new ideas and seeking innovative solutions and is aware of the responsibility for the consequences of his/her actions and decisions.	P8S_KK
K03	S/he understands the responsibility of continuously expanding his/her knowledge and improving his/her research skills. S/he is ready to critically evaluate scientific achievements in the discipline of biological and chemical sciences and his/her own contribution to the development of the discipline. S/he is aware of his/her own limitations and understands the need for getting advice and exchange of experience within the scientific community.	P8S_KK
K04	S/hhe understands the principles of working creatively in a research team in the process of conducting scientific research, developing results and producing scientific publications.	P8S_KO
K05	S/he understands and applies the principles of scientific ethics including research and publication integrity	P8S_KR
K06	S/he applies the principles of ethics, including data confidentiality, in scientific research. Follows the principles of humanitarian treatment of laboratory animals in scientific research and strictly follows the recommendations of the research surveillance authorities.	P8S_KR
K07	S/he is aware of the ethical, legal and economic responsibility of spending funds raised for research as designated.	P8S_KR
K08	S/he is responsible and able to take care of his/her own safety and that of his/her colleagues in the workplace.	P8S_KO
K09	S/he understands the importance and social relevance of teaching activities in the field. Is committed to the training of specialists in the field, as well as to the responsible communication of knowledge and opinions on scientific achievements to society.	P8S_KR
		P8S_KR

K10	Follows good academic behaviour, understands the importance and creativity of the teacher-student relationship.	
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*Appendix 2 to the Education Program at the Doctoral School of
Molecular Biology and Biological Chemistry*

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date

Supervisor's opinion on the project prepared by the PhD student

I give a positive opinion on the project for research funding / scholarship,
(eg Preludium, NAWA)

prepared by Ms / Mr
name and surname of the doctoral student

I accept the content of this application and declare cooperation in the implementation of the project.

.....
supervisor's signature

*Annex 3 to the Education Program at the Doctoral School of
Molecular Biology and Biological Chemistry The*

list of certificates and documents confirming the knowledge of modern English

§ 1

The list of certificates confirming the knowledge of modern English is as follows:

1. Certificate confirming the knowledge of the English language issued by the National School of Public Administration as a result of a linguistic screening procedure;
2. Certificates confirming the knowledge of English at least at the B2 level on the global scale of language proficiency according to the "Common European Framework of Reference for Languages: learning, teaching, assessment (CEFR) - European system of description of language education: learning, teaching, assessment (CEFR)":
 - 1) Certificates issued by institutions associated with the Association of Language Testers in Europe (ALTE) - levels ALTE Level 3 (B2), ALTE Level 4 (C1), ALTE Level 5 (C2), in particular First Certificate in English (FCE), Certificate in Advanced English (CAE), Certificate of Proficiency in English (CPE), Business English Certificate (BEC) Vantage - at least Pass, Business English Certificate (BEC) Higher, Certificate in English for International Business and Trade (CEIBT),
 - 2) Certificates of the following institutions:
 - a) Educational Testing Service (ETS) - in particular the following certificates: Test of English as a Foreign Language (TOEFL) - at least 87 points in the Internet-Based Test (iBT) version; Test of English as a Foreign Language (TOEFL) - at least 180 points in the Computer-Based Test (CBT) version supplemented by at least 50 points from the Test of Spoken English (TSE); Test of English as a Foreign Language (TOEFL) - at least 510 points in the Paper-Based Test (PBT) version supplemented by at least 3.5 points from the Test of Written English (TWE) and by at least 50 points from the Test of Spoken English (TSE); Test of English for International Communication (TOEIC) - at least 700 points; Test de Français International (TFI) - at least 605 points,
 - b) European Consortium for the Certificate of Attainment in Modern Languages (ECL),
 - c) City Guilds, City Guilds Pitman Qualifications, Pitman Qualifications Institute - in particular the following certificates: English for Speakers of Other Languages (ESOL) - First Class Pass at Intermediate Level, Higher Intermediate Level, Advanced Level; International English for Speakers of Other Languages (IESOL) - "Communicator" level, "Expert" level, "Mastery" level; City Guilds Level 1 Certificate in ESOL International (reading, writing and listening) Communicator (B2) 500/1765/2; City Guilds Level 2 Certificate in ESOL International (reading, writing and listening) Expert (C1) 500/1766/4; City Guilds Level 3 Certificate in ESOL International (reading, writing and listening) Mastery (C2) 500/1767/6; Spoken English Test (SET) for Business - Stage B "Communicator" level, Stage C "Expert" level, Stage C "Mastery" level; English for Business Communications (ECB) - Level 2, Level 3; English for Office Skills (EOS) - Level 2,
 - d) Edexcel, Pearson Language Tests, Pearson Language Assessments - in particular the following certificates: London Tests of English, Level 3 (Edexcel Level 1 Certificate in ESOL International); London Tests of English, Level 4 (Edexcel Level 2 Certificate in ESOL International); London Tests of English, Level 5 (Edexcel Level 3 Certificate in ESOL International),

- e) Education Development International (EDI), London Chamber of Commerce and Industry Examinations Board - in particular the following certificates: London Chamber of Commerce and Industry Examinations (LCCI) - English for Business Level 2, English for Business Level 3, English for Business Level 4; London Chamber of Commerce and Industry Examinations (LCCI) - Foundation Certificate for Teachers of Business English (FTBE); London Chamber of Commerce and Industry Examinations (LCCI) - English for Tourism Level 2 - "Pass with Credit" level, "Pass with Distinction" level,
 - f) University of Cambridge ESOL Examinations, British Council, IDP IELTS Australia - in particular certificates: International English Language Testing System IELTS - over 6 points,
 - g) Warsaw University Coordination Council for the Certification of Language Proficiency;
- 3) telc GmbH, WBT Weiterbildungs-Testsysteme GmbH - in particular the following certificates: B2 Certificate in English - advantage, B2 Certificate in English for Business Purposes - advantage, Certificate in English for Technical Purposes (B2), telc English B2, telc English B2 Business, telc English B2 Technical, telc English C1;
3. Graduation diplomas:
- 1) Studies in the field of foreign philology or applied linguistics in the field of English;
 - 2) Teachers' College of Foreign Languages in the field of English;
 - 3) Of the National School of Public Administration in the field of English.
4. A document issued abroad confirming obtaining a degree or an academic title or a degree or title in the field of art - English shall be recognized if it was the language of instruction of the institution providing the education.
5. Document confirming the completion of studies or postgraduate studies abroad or in the Republic of Poland - the language of instruction shall be recognized if the language of instruction was only English.
6. A document issued abroad recognized as equivalent to the secondary school-leaving examination certificate - the language of instruction shall be considered if the language of instruction was exclusively English.
7. International Baccalaureate Diploma in English.
8. European Baccalaureate diploma in English.
9. Certificate of passed the departmental examination in English in:
- 1) Ministry of Foreign Affairs;
 - 2) the office supporting the minister responsible for economy, the Ministry of Foreign Economic Cooperation, the Ministry of Foreign Trade and the Ministry of Foreign Trade and Maritime Economy;
 - 3) Ministry of National Defense - level 3333, level 4444 according to STANAG 6001.
10. A certificate issued by the National School of Public Administration confirming qualifications to work in a high state position.
11. Document confirming entry on the list of sworn translators in the Republic of Poland or a document confirming the authorization of a sworn translator in another Member State of the European Union, a member state of the European Free Trade Association (EFTA), which is a party to the Agreement on the European Economic Area or in the Swiss Confederation in terms of language English.