

Załącznik Nr 1 do zarządzenia Nr 4 Rektora z dnia 12 stycznia 2015 r.
w sprawie tworzenia studiów doktoranckich w UMK w Toruniu

Learning outcomes for Chemistry Doctoral Studies	
Lp.	After Chemistry Doctoral Studies, a graduate achieves the following learning outcomes
Knowledge	
EK_W01	Possesses the extended knowledge of the basic fields of chemistry
EK_W02	Has knowledge of the latest developments in the field of the chosen specialty of chemistry
EK_W03	Knows modern research techniques used in chemistry
EK_W04	Knows modern methods of presentation of his/her research results
EK_W05	Knows and uses modern teaching methods and techniques of checking knowledge
EK_W06	Knows and applies the principles of health and safety in chemical laboratories
EK_W07	Knowledgeable about the protection of intellectual property, raising funds for research and creating research projects
EK_W08	Knows two modern foreign languages (including English)
Skills	
EK_U01	Critically analyzes the current state of chemical knowledge
EK_U02	Can search scientific literature, use databases, select information
EK_U03	Can formulate and solve scientific problems of chemistry independently, using appropriate research techniques

EK_U04	Describes his/her own results in publications, presents them at conferences, seminars
EK_U05	Demonstrates permanent ability to self-study
EK_U06	Develops scientific topics in which he specializes
EK_U07	Demonstrates initiative and the ability to adapt the research topics to the needs of economy
Social competences	
EK_K01	Shows an active, responsible attitude and scientific initiative, understands the problems of the university environment
EK_K02	Is aware of the function of science in economy and the life of man, understands the relationship between science and industry
EK_K03	Strives for the introduction of innovative scientific solutions
EK_K04	Able to organize teamwork, also in interdisciplinary groups
EK_K05	Honestly assesses the effects of his/her own work, his/her colleagues' and students'
EK_K06	Takes care of propagating knowledge of chemistry outside the university environment, inspires others to acquire knowledge
EK_K07	Obeys ethical standards, respects the work of others, takes care of university property

Programme of doctoral studies

General description of the doctoral studies	
Faculty leading the study:	Faculty of Chemistry
Name of doctoral studies (in Polish):	Studia Doktoranckie Chemii
Name of doctoral studies (in English)::	Chemistry Doctoral Studies
Location of the course in field(s) of education: - learning field: - branch of science/art: - discipline of science/art:	X – field of education related to the exact sciences A – Academic profile
Number of semesters:	8
Total number of teaching hours	575
Total number of ECTS credit points	45
Objective of doctoral studies:	PhD students have the possibility to gain advanced knowledge of chemistry, know modern instrumental techniques and prepare for independent research and teaching at the university. Students will also carry out the original research project under the guidance of a tutor (promoter) resulting in the writing and defense of the doctoral dissertation.
The relationship of the training program with the mission and strategy of the Nicolaus Copernicus University	Chemistry Doctoral Studies enable PhD students to develop and conduct research in the framework of specialization implemented at the Department of Chemistry.
Indication whether in the process of defining learning outcomes and in the preparation and improvement of the study program, opinions of stakeholders, students, graduates, employers were included:	PhD students' opinion was taken into account.

Teaching modules, with the intended learning outcomes			
Teaching modules/subjects	Number of ECTS credits	Intended learning outcomes	Methods of verification of learning outcomes achieved by PhD student
I. Teaching module covering classes of a fundamental nature in the learning field in which doctoral studies are conducted.	10	<p>Possesses the extended knowledge of the basic fields of chemistry.</p> <p>Knows and applies the principles of health and safety in chemical laboratories.</p> <p>Critically analyzes the current state of chemical knowledge.</p> <p>Obeys ethical standards, respects the work of others, takes care of university property</p>	Exams, annual reports
II. Teaching module covering classes of a detailed nature in the learning field in which doctoral studies are conducted	18	<p>Has knowledge of the latest developments in the field of the chosen specialty of chemistry.</p> <p>Knows modern research techniques used in chemistry.</p> <p>Can search scientific literature, use databases, select information.</p> <p>Can formulate and solve scientific problems of chemistry independently, using appropriate research techniques.</p> <p>Describes his/her own results in publications, presents them at conferences, seminars.</p> <p>Demonstrates permanent ability to self-study.</p> <p>Develops scientific topics in which he specializes.</p>	Exams, annual reports
III. Teaching module which includes classes developing teaching skills .	5	<p>Knows and uses modern teaching methods and techniques of checking knowledge.</p> <p>Honestly assess the effects of his/her own work, his/her colleagues' and students'.</p>	Continuous assessment, graded credit

<p>IV. Teaching module which includes classes developing professional skills of a researcher.</p>	<p>5</p>	<p>Knows the modern methods of presentation of his/her research results . Knowledgeable about the protection of intellectual property, raising funds for research and creating research projects. Can formulate and solve scientific problems of chemistry independently, using appropriate research techniques. Describes his/her own results in publications, presents them at conferences, seminars. Demonstrates initiative and the ability to adapt the research topics to the needs of the economy. Strives for the introduction of innovative scientific solutions.</p>	<p>Continuous assessment, graded credit</p>
<p>V. Teaching module which includes classes to prepare for the doctoral additional discipline examination (e.g. philosophy, economics).</p>	<p>4</p>	<p>Shows an active, responsible attitude and scientific initiative, understands the problems of the university environment. Is aware of the function of science in the economy and the life of man, understands the relationship between science and industry. Demonstrates permanent ability to self-study.</p>	<p>Doctoral examination</p>
<p>VI. Teaching module which includes classes to prepare for doctoral examination of modern foreign language.</p>	<p>3</p>	<p>Knows two modern foreign languages (including English). Demonstrates permanent ability to self-study.</p>	<p>Doctoral examination</p>
<p>VII. Professional training</p>	<p>0</p>	<p>Knows and uses modern teaching methods and techniques of checking knowledge. Honestly assess the effects of his/her own work, his/her colleagues' and students'. Takes care of propagating knowledge of chemistry outside the university environment,</p>	<p>Continuous assessment, graded credit</p>

		inspires others to acquire knowledge.	
Total	45		

Program studiów obowiązuje od roku akademickiego 2015/2016

Program studiów został uchwalony na posiedzeniu Rady Wydziału Chemii w dniu 25.02.2015 r.

(nazwa wydziału)

(data posiedzenia rady wydziału)

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(podpis Dziekana)

Framework plan of the doctoral studies

Faculty leading the study	Faculty of Chemistry
Name of doctoral studies:	Chemistry Doctoral Studies
Number of semesters:	8
Total number of teaching hours	575
Number of ECTS credit points:	45

1st year

Obligatory classes							
USOS code of module	Teaching module	Subject	USOS code of subject	Form of classes ¹	Form of credit ²	Teaching hours	Number of ECTS credits
	Teaching module which includes classes developing professional skills of a researcher.	Safety and health elements	9001-BHP-16	lecture	E	5	1
	Teaching module which includes classes developing teaching skills. Teaching module which includes classes developing professional skills of a researcher.	Modern techniques of teaching: teaching chemistry	0600-S3-DSC-EN-NTPZDNCh	Lecture, practice, individual work	E	30	5
	Teaching module which includes classes to prepare for doctoral examination of modern foreign language.	Foreign language course (to be chosen)	4100-7Z-EN-030-Z, 4100-7Z-EN-015-L	practice	Z (doctoral examination)	45	3
	Teaching module covering classes of a detailed nature in the learning field in which doctoral studies are conducted.	Doctoral seminar	0600-S3-DSC-EN-SN	seminar	Z	30	1
	Teaching module which includes classes developing teaching skills. Professional training.	Participation in teaching classes		laboratory	Z	30	0

¹ Forma zajęć z poszczególnych przedmiotów/modułów musi być zgodna z określonymi w UMK przepisami w sprawie zasad ustalania zakresu obowiązków nauczycieli akademickich, rodzajów zajęć dydaktycznych objętych zakresem tych obowiązków oraz zasad obliczania godzin dydaktycznych.

² Z – credit with a grade, E – exam with a grade .

Total:							140	10
Optional classes								
	Teaching module covering classes of a fundamental nature in the learning field in which doctoral studies are conducted.	Optional subjects (to be chosen from the available list)		lecture	E	15	3	
	Teaching module covering classes of a detailed nature in the learning field in which doctoral studies are conducted.	Optional subjects (to be chosen from the available list)		lecture	E	15	3	
Total :							30	6
Total number of teaching hours and ECTS credits for optional and obligatory classes							170	16

2nd year

Obligatory classes							
USOS code of module	Teaching module	Subject	USOS code of subject	Form of classes ³	Form of credit ⁴	Teaching hours	Number of ECTS credits
	Teaching module which includes classes developing professional skills of a researcher	The rules for creating research projects and for raising funds for education	0600-S3-DSC-EN-ZTP	Lecture, practice, individual work	E	15	3
	Teaching module covering classes of a detailed nature in the learning field in which doctoral studies are conducted	Doctoral seminar	0600-S3-DSC-EN-SN	seminar	Z	30	1
	Teaching module which includes classes developing teaching skills. Professional training.	Teaching classes		laboratory	Z	60	0
Total :						105	4
Optional classes							
	Teaching module covering classes of a fundamental or	Optional subjects (to be chosen from the available list)		Lecture	E	15	3

³ Forma zajęć z poszczególnych przedmiotów/modułów musi być zgodna z określonymi w UMK przepisami w sprawie zasad ustalania zakresu obowiązków nauczycieli akademickich, rodzajów zajęć dydaktycznych objętych zakresem tych obowiązków oraz zasad obliczania godzin dydaktycznych.

⁴ Z – credit with a grade, E – exam with a grade.

	detailed nature in the learning field in which doctoral studies are conducted.	Subject led by Professor visiting from abroad - obligatory for students of second and third year (when a lecture is not started, PhD student is required to select the 30 h from optional subjects)		Visiting professor lecture or other 30h lectures	E	30	6
Total :						45	9
Total number of teaching hours and ECTS credits for optional and obligatory classes						150	13

3rd year

Obligatory classes							
USOS code of module	Teaching module	Subject	USOS code of subject	Form of classes ⁵	Form of credit ⁶	Teaching hours	Number of ECTS credits
	Teaching module which includes classes to prepare for the doctoral additional discipline examination (e.g. philosophy, economics).	The subject of additional discipline (e.g. philosophy, economics - optional) – every 2 years	0600-S3-DSC-EN-FIL	lecture	Z (doctoral examination)	30	4
	Teaching module covering classes of a detailed nature in the learning field in which doctoral studies are conducted.	Doctoral seminar	0600-S3-DSC-EN-SN	seminar	Z	30	1
	Teaching module which includes classes developing teaching skills. Professional training.	Teaching classes		laboratory	Z	60	0
Total :						90-120	1-5
Optional classes							
	Teaching module covering classes of a fundamental or	Optional subjects (to be chosen from the available list)		lecture	E	15	3

⁵ Forma zajęć z poszczególnych przedmiotów/modułów musi być zgodna z określonymi w UMK przepisami w sprawie zasad ustalania zakresu obowiązków nauczycieli akademickich, rodzajów zajęć dydaktycznych objętych zakresem tych obowiązków oraz zasad obliczania godzin dydaktycznych.

⁶ Z – credit with a grade, E – exam with a grade.

	detailed nature in the learning field in which doctoral studies are conducted	Subject led by Professor visiting from abroad - obligatory for students of second and third year (when a lecture is not started, PhD student is required to select the 30 h from optional subjects		Visiting professor lecture or other 30h lectures	E	30	6
Total :						45	9
Total number of teaching hours and ECTS credits for optional and obligatory classes						135-165	10-14

4th year

Obligatory classes							
USOS code of module	Teaching module	Subject	USOS code of subject	Form of classes ⁷	Form of credit ⁸	Teaching hours	Number of ECTS credits
	Teaching module covering classes of a detailed nature in the learning field in which doctoral studies are conducted.	Doctoral seminar, preparation for dissertation defense	0600-S3-DSC-EN-SN	Seminar, individual work	Z	30	2
	Teaching module which includes classes developing teaching skills. Professional training	Teaching classes		laboratory	Z	60	0
Total :						90	2
Total number of teaching hours and ECTS credits for optional and obligatory classes						90 (120)*	2 (6)*

*additional hours (30h) and ECTS credits (4) include additional discipline lecture, if not held in the third year of studies

Plan studiów obowiązuje od roku akademickiego 2015/2016

Plan studiów został uchwalony na posiedzeniu Rady Wydziału Chemii w dniu 25.02.2015.

(podpis Dziekana)

⁷ Forma zajęć z poszczególnych przedmiotów/modułów musi być zgodna z określonymi w UMK przepisami w sprawie zasad ustalania zakresu obowiązków nauczycieli akademickich, rodzajów zajęć dydaktycznych objętych zakresem tych obowiązków oraz zasad obliczania godzin dydaktycznych.

⁸ Z – credit with a grade, E – exam with a grade.

Individual framework of the doctoral studies for the academic year 2013/2014

Based on framework plan approved by Rada Wydziału Chemii
w dniu 25.02.2015 r.

Name of doctoral studies:	Chemistry Doctoral Studies
Name and surname of the PhD student	
Tutor or supervisor	
Supporting supervisor	
Total number of teaching hours	575
Number of ECTS credit points:	45

Year of the studies

Obligatory classes							
USOS code of module	Teaching module	Subject	USOS code of subject	Form of classes ⁹	Form of credit ¹⁰	Teaching hours	Number of ECTS credits
Total :							
Optional classes							
Total :							
Total number of teaching hours and ECTS credits for optional and obligatory classes							

Toruń, dnia

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(podpis doktoranta)

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(podpis opiekuna naukowego/promotora)

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(podpis kierownika studiów doktoranckich)

⁹ Forma zajęć z poszczególnych przedmiotów/modułów musi być zgodna z określonymi w UMK przepisami w sprawie zasad ustalania zakresu obowiązków nauczycieli akademickich, rodzajów zajęć dydaktycznych objętych zakresem tych obowiązków oraz zasad obliczania godzin dydaktycznych.

¹⁰ Z – credit with a grade, E – exam with a grade.

Paid PhD studies last four years (575 hours, 45 ECTS).

For each academic year it is obligatory to accumulate a certain number of ECTS credit points according to the plan, to pass at least two exams, to have a professional training (teaching classes), and to submit the annual report.

Optional subjects are chosen (after consultation with the tutor/supervisor) from the available list of:

- lectures for PhD students,
- general university lectures,
- optional courses for second cycle studies (S2) (if not previously implemented)
- lectures in other fields of studies.

PhD student chooses one foreign language course of 45 h.

PhD student having certificates testifying foreign language competence (the list of certificates is given in Annex 1 to the Regulation MSHE dated 22 September 2011., DU No. 204, pos. 1200, p. 12048) is exempted from the foreign language doctoral examination. In the case of exemption from examination, a PhD student chooses another subject to gain the required number of ECTS credits.

Lectures included in the study programme (with the exception of additional discipline and seminar) finish with the exams, however foreign language classes finish with credit with a grade.

210 hours of teaching classes are to be done during the PhD program (including 30 hours of participation + 180 teaching hours). PhD student can not have less than 10h and not more than 90 hours per year of professional training in the form of teaching classes.

The doctoral procedure can be initiated, provided that PhD student has a scientific publication in the form of a book published or accepted for printing or at least one scientific publication in a peer reviewed scientific journal (Act (Ustawa) of 18 March 2011.).

Additional disciplines (philosophy or economics) doctoral examinations and foreign language doctoral examination should be taken after the initiation of the doctoral procedure. Comprehensive chemistry examination, corresponding to the topic of the dissertation, should be taken after the submission of the dissertation and receiving positive reviews.

The prerequisites for the positive assessment of doctoral studies are as follows:

- accumulating 45 ECTS credit points
- passing all exams according to the plan (including 3 doctoral examinations)
- taking mandatory professional training (teaching classes)

Only after the above conditions have been met can the doctoral candidate be allowed to defend the dissertation.

A detailed, individual doctoral study plan is established by a tutor and approved by the head of the Doctoral Studies.