

### Study plan

<b>Faculty offering the field of study:</b>	Faculty of Chemistry NCU in Toruń Department of Chemistry NAUKMA in Kyiv
<b>Field of study:</b>	Modern Materials for Chemistry and Medicinal Applications
<b>Level of study:</b>	second-cycle
<b>Level of the Polish Qualifications Framework:</b>	level 7
<b>Degree profile:</b>	academically oriented
<b>Mode of study:</b>	full-time programme
<b>Number of semesters:</b>	4
<b>Number of ECTS credit necessary for completing a field of study on a given level:</b>	120
<b>Total number of teaching hours:</b>	<b>950</b> + university-wide courses

Semester I NCU 300h

Name of a course module	Course name	Course code in NCU	ECTS credits	Number of hours of direct contact with the teacher or tutor – compliant with a class type <sup>1</sup>			Form of crediting a course <sup>2</sup>
				L	P/S	Lab	
Basic NCU	Physicochemical methods for modern materials characterization	0600-S2-MMCM-PMMMC	8	30		50	C, E
	Polymer and composite materials	0600-S2-MMCM-PCM	7	20		50	C, E
	Nanomaterials and nanotechnologies in medicine	0600-S2-MMCM-NNM	6	15		45	C, E
	Modern separation techniques	0600-S2-MMCM-MST	6	15		45	C, E
Foreign language classes	English in chemistry II	4200-	3		30		C, E
<b>Total:</b>			<b>30</b>	80	30	190	x
			x	<b>300</b>			

\* Each subsequent semester must be described in compliance with this Semester I template.

<sup>1</sup> L- lecture, P- practical classes, S-seminar, Lab- laboratory<sup>2</sup> Graded credit, examination

## Semester II NAUKMA 300h

Name of a course module	Course name	Course code in NAUKMA	ECTS credits	Number of hours of direct contact with the teacher or tutor – compliant with a class type			Form of crediting a course
				L	P/S	Lab	
Basic	Sorption and adsorption	OK6	6	26		34	C, E
	Pharmaceutical chemistry	OK7	6	20		40	C, E
	Organic synthesis in early drug discovery	OK8	6	26	16	18	C, C, E
	Methodology of scientific research in chemistry	OK9	3	10	20		C, E
	Purification and separation of substances by membrane methods	OK10	6	20	10	30	C, C, E
Foreign language classes	English for public speaking and academic writing	OK13	3		30		C, E
<b>Total:</b>			<b>30</b>	102	76	122	x
			x	<b>300</b>			

## Semester III NCU 150h, NAUKMA 150h

Name of a course module	Course name	Course code in NCU/ NAUKMA	ECTS credits	Number of hours of direct contact with the teacher or tutor – compliant with a class type			Form of crediting a course
				L	P/S	Lab	
Optional NCU	Optional course 3 x 50h	0600-S2-	15	150			C, C
Optional NAUKMA	Optional course 3 x 50h	ББ 1.1.-, ББ 2.1.-	15	150			C, E
<b>Total:</b>			<b>30</b>	300			x

## Semester IV NCU 50h, NAUKMA 50h

Name of a course module	Course name	Course code in NCU/ NAUKMA	ECTS credits	Number of hours of direct contact with the teacher or tutor – compliant with a class type			Form of crediting a course
				L	P/S	Lab	
Elective course	University-wide courses	0G-	5				C/E
External course	Social and technical innovations	0600-S2-MMCM-STI	2	20			C
Diploma project and/or diploma examination	Diploma project	0600-OK12	20			200*	E
	Diploma seminar	0600-S2-MMCM-D OK11	3		30		C
<b>Total:</b>			<b>30</b>	20	30	0	x

	x	<b>50</b>
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**Optional course NCU:**

Name of a course module	Course name	Course code in NCU	ECTS credits	Number of hours of direct contact with the teacher or tutor – compliant with a class type			Form of crediting a course
				L	P/S	Lab	
Optional	Metal complexes in medicine and modern personalized implantology	0600-S2-MMCM-MCMMPI	5	20		30	C, C
	Materials and methods in natural drugs technology	0600-S2-MMCM-MNDT	5	10		40	C, C
	From natural resources to free radicals	0600-S2-MMCM-NRFR	5	20		30	C, E
	Structural basics for the activity of active substances	0600-S2-MMCM-SBAAS	5	10		40	C, E
	Drug synthesis and pharmaceutical form	0600-S2-MMCM-DSPF	5	10		40	C, E

**Optional course NAUKMA:**

Name of a course module	Course name	Course code in NAUKMA	ECTS credits	Number of hours of direct contact with the teacher or tutor – compliant with a class type			Form of crediting a course
				L	P/S	Lab	
Optional	Fundamentals of product and project management	BB 2.1.	5	20	30		C, E
	Cell and tissue engineering in the creation of new biological materials	BB 2.3.	5	24		26	C, E
	Organic functional materials	BB 1.4.	5	22	16	12	C, E
	Nanotechnology in pharmacology	BB 1.3.	5	22	18	10	C, E
	Modern drug delivery systems	BB 1.2.	5	24		26	C, E

The double diploma study programme is organized as follows:

- during the first semester, students will attend courses at Nicolaus Copernicus University in Toruń (Poland), (300h).
- during the second semester, students will attend courses at National University of Kyiv-Mohyla Academy (Ukraine), (300 h).

- during the third semester, students from both Universities will attend courses at Nicolaus Copernicus University in Torun to complete optional courses for 15 ECTS credits (150 h) and subsequently will move to National University of Kyiv-Mohyla Academy to complete optional courses for another 15 ECTS credits (150 h),
- during the fourth semester, students will implement the master degree project and diploma seminar (30 h) at the chosen partner university, while Social and technical innovations (20h) will be conducted at Nicolaus Copernicus University in Toruń (Poland) (as on-site or remote classes)).

This study plan is effective as of winter semester of the academic year 2022/2023.

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*(Dean's stamp and signature)*