b) MANDATORY INDICATORS

Indicator 1: % Articles in Top 10% (U and P) - according to the indicated database

for a university as a whole / for each priority research area *	Reference years for base values						Reference years for target values
	2013	2014	2015	2016	2017	Value for the period 2013–2017	Value for the period 2020–2024
an indicator for a university as a whole	7,33	5,86	7,16	7,90	8,11	7,31	7,46
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					Number of articles in: 2013 - 737; 2014 - 751; 2015 - 866; 2016 - 899; 2017 - 838; Value for the period 2013–2017 =4091; Value for the period 2020-2024 = 4175	
Interacting Minds, Societies, Environments	12,50	7,41	5,41	4,35	11,11	7,82	8,24
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					Number of articles in: 2013 - 24; 2014 - 27; 2015 - 37; 2016 - 46; 2017 - 45; Value for the period 2013–2017 = 179; Value for the period 2020-2024 = 187	
From Fundamental Optics to Applied Biophotonics	7,89	12,00	8,33	13,46	7,69	10,13	10,42
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					Number of articles in: 2013 - 38; 2014 - 50; 2015 - 48; 2016 - 52; 2017 - 39; Value for the period 2013-2017 = 227; Value for the period 2020-2024 = 233	
Astrophysics & Astrochemistry	9,47	9,80	9,18	11,76	10,34	10,06	10,34
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					Number of articles in: 2013 - 95; 2014 - 102; 2015 - 98; 2016 - 85; 2017 - 87; Value for the period 2013–2017 = 467; Value for the period 2020-2024 = 480	
Dynamics, Mathematical Analysis & Artificial Intelligence	9,86	13,21	22,08	21,82	17,31	16,88	17,97
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					Number of articles in 2013 - 71; 2014 - 53; 2015 - 77; 2016 - 55; 2017 - 52; Value for the period 2013–2017 = 308; Value for the period 2020-2024 = 328	
Towards personalized medicine	11,32	6,78	9,72	2,99	12,16	8,62	9,03
	A number of articles in top 10% in WoS or Scopusb in the reference years and period.					Number of articles in: 2013 - 53; 2014 - 59; 2015 - 72; 2016 - 67; 2017 - 74;; Value for the period 2013–2017 = 329; Value for the period 2020-2024 = 345	

Indicator 2: Normalized Citation Impact (U and P) - according to the indicated database

for a university as a whole / for each priority research area *	Reference years for base values						Reference years for target values
	2013	2014	2015	2016	2017	Value for the period 2013–2017	Value for the period 2020–2024
an indicator for a university as a whole	0,79	0,78	0,79	0,86	1,15	0,88	0,91
Dynamics, Mathematical Analysis & Artificial Intelligence	1,20	1,13	1,37	1,37	1,51	1,32	1,35
Astrophysics & Astrochemistry	1,02	1,28	0,87	1,07	1,43	1,13	1,16
Towards personalized medicine	0,85	0,91	1,05	0,82	1,27	0,99	1,03
Interacting Minds, Societies, Environments	0,81	0,70	0,67	0,54	1,40	0,85	0,90
From Fundamental Optics to Applied Biophotonics	1,23	1,09	0,99	1,36	3,43	1,56	1,69

Indicator 3: % Articles in International Collaborations (P) - according to the indicated database

for a university as a whole / for each priority research area *	Reference years for base values						Reference years for target values
	2013	2014	2015	2016	2017	Value for the period 2013–2017	Value for the period 2020–2024
Towards personalized medicine	30,19	35,59	29,17	28,36	40,54	32,92	33,80
From Fundamental Optics to Applied Biophotonics	47,37	56,00	45,83	53,85	41,03	49,34	50,86
Interacting Minds, Societies, Environments	37,51	18,52	21,62	10,87	17,78	19,55	21,88
Astrophysics & Astrochemistry	61,05	75,49	69,39	60,00	73,56	68,09	69,57
Dynamics, Mathematical Analysis & Artificial Intelligence	26,76	32,08	31,17	30,91	57,69	34,74	38,19

Indicator 4: Scholarly Books of Prestigious Publishers (P)

for each priority research area *	Number of scholarly books published in the years 2014–2018	Number of scholarly books published in the years 2021–2025
Interacting Minds, Societies, Environments	6	8

A list of scholarly books published in the years 2014–2018, together with basic bibliographic data, including a name of publishing house.

Attachment no5, File: NCU - List of scholary books published in the years 2014-2018.pdf

Indicator 5: International Research Grants (P)

for each priority research area *	Number of grants in 2014-2018	Number of grants in 2021-2025
Interacting Minds, Societies, Environments	5	6
Towards personalized medicine	6	7
Dynamics, Mathematical Analysis & Artificial Intelligence	8	9
From Fundamental Optics to Applied Biophotonics	6	8
Astrofizyka i Astrochemia	8	10

A list of the most important grants received in the years 2014–2018 (up to ten grants for each priority research area) which comprises a project title, name of grant funder and date of conclusion of a contract.

List of the most important grants received in the years 2014–2018, realized in international collaboration

Astrophysics & Astrochemistry
1. Breaking the curse of dimension in heavy-element chemistry
    H2020-MSCA-IF-2015
    01.07.2016
    Canada, Hungary, France
2. RadioNet4 – integrating world-class infrastructures for research in radio astronomy at European level
    EU H2020
    1.01.2017

International agreement
3. Polish contribution to preparation and implementation of the research program for CTA project in its first phase of operation
National Science Center (NSC)
20.06.2017
International agreement
4. Studies of a new population of active galaxies
NSC
10.05.2018
LOFAR International agreement
5. Hot Jupiters on eccentric orbits: a search for additional planets and planet-star interactions
NSC
12.07.2017
Spain, Germany, Bulgaria, Denmark
6. New electron correlation methods for heavy-element chemistry
NSC
01.04.2016
Canada, Hungary, France
7. Elucidating electronic structures and atomic and molecular properties across the actinide series
NSC, H2020 MSC COFUND
01.05.2017
Canada, Hungary
8. Controlled ultracold collisions and chemical reactions of atoms and molecules with complex structure
NSC
25.01.2018
France, Israel, Germany, Switzerland, Holland, UK

From Fundamental Optics to Applied Biophotonics
1. Advanced BiomEdical OPTICAL Imaging and Data Analysis
MSC Actions H2020 ITN
2015.07.14
Spain, Germany, UK, France
2. Integrated Quantum Clock
H2020
2018.10.01
Holland, UK, Denmark, Austria, Israel
3. Cavity-Enhanced Quantum Optical Clocks
QUANTERA Consortium/NSC

2018.04.12

Italy, France, Denmark, Spain

4. Optical clocks with 1E-18 uncertainty

European Metrology Programme for Innovation and Research (EMPIR) H2020

2016.05.01

Czech Rep., Italy, France, Turkey, Denmark, Germany, Finland

5. Applications of single-photon technologies

Foundation for Polish Science (FPS)

2017.10.04

Canada, Czech Rep., Brazil, New Zeeland

6. Lenticular and vitreal light scattering and refraction for tomorrow's eye diagnostics

FPS

2018.10.18

USA, Spain

Dynamics, Mathematical Analysis & Artificial Intelligence

1. In the quest of sources of brain cognitive activity

NSC

28.11.2016

USA, Russia

2. Ergodic theory: disjointness, genericity via nonconventional ergodic theorems and connections with number theory

NSC

13.07.2015

USA, France

3. Quantitative aspects of evolution equations: operator approach

NSC

28.01.2015

Germany, France, UK, China

4. New methods of comprehensive analysis of concurrent computing systems

NSC

18.02.2014

Germany, Canada, Holland, Finland, UK

5. Non-Markovian quantum evolution

NSC

17.02.2016

Finland, Italy, Russia, Spain

6. Positive maps in mathematical physics

NSC
20.07.2016
Austria, Italy
7. Quantum dynamical maps beyond Markovian regime
NSC
12.04.2019
Spain, Italy, Russia, Finland, Germany
8. Dynamics of nonlinear evolution equations - topological approach
NSC
20.02.2014
Austria, Brazil, Sweden, Italy, Germany, UK

Towards Personalized Medicine
1. Airborne Biomarkers for Colorectal Cancer
ERA-NET: TRANSCAN-2, EU H2020 - NCBR
01.10.2018
Holland, Germany
2. New analytical solutions in oncology: from basic research to rapid intraoperative diagnostics
NSC
13.04.2016
UK, Canada
3. Breath analysis as novel method for diagnosis of ventilation-associated pneumonia and monitoring of personalized therapy
NSC
2018-09-24
Austria, Germany
4. A search for mechanism of anticancer properties of vitamin C; possible link between epigenetic DNA modifications and vitamin C (ascorbate) oral supplementation: in vivo study
NSC
2018-10-08
USA, UK
5. Products of DNA demethylation and deamination pathways as new biomarkers of development and predictors of the outcome in acute leukemias
NSC
2016-07-11
USA, UK
6. Biopsy-free metabolomics and lipidomics analysis of kidney as a step towards better assessment of organs selected for transplantation and post-reperfusion injury
NSC
2018-08-14

Canada
7. Application of hyphenated and combined separation techniques in metabolomic studies and searching for cancer markers
NSC
2015-05-15
Rumania, Brazil, Germany, Turkey

Interacting Minds, Societies, Environments
1. Creating interfaces: building capacity for integrated governance at the Food-Water Energy Nexus in cities on the water
NSC, (SUGI) H2020
25.05.2018
USA, UK, Rumania
2. Management Committee of the Oceans Past Platform (OPP) in European Cooperation in Sciences and Technology (COST) IS1403
14.05.2014
International agreement
3. Horse in Poland in the Early Piasts and Internal Fragmentation
NSC
19.01.2018
UK
4. Pantomime in language evolution: Expressive potential and structural characteristics of bodily mimetic acts
NSC
Italy, Sweden, UK
29.06.2018
5. Positive social change in an organization as a factor of company engagement in sustainable development
NSC
15.01.2018
Finland

Indicator 6: Staff Policy Openness (U)

Value as of 31 December 2018 (generated automatically from POL-on system)	Value as of 31 December 2025
19,50	20,00

Indicator 7: Student-to-Staff Ratio (U)

Value as of 31 December 2018 (generated automatically from POL-on system)	Value as of 31 December 2025
10,22	9,80

c) OPTIONAL INDICATORS

Indicator 1: Normalized Citation Impact for Internationally Co-authored Articles (P) - according to the indicated database

for each priority research area	Reference years for base values						Reference years for target values
	2013	2014	2015	2016	2017	Value for the period 2013–2017	Value for the period 2020–2024
Astrophysics & Astrochemistry	1,42	1,58	0,97	1,43	1,74	1,43	1,47
From Fundamental Optics to Applied Biophotonics	1,77	1,47	1,02	1,98	7,16	2,40	2,60
Interacting Minds, Societies, Environments	1,59	1,90	1,09	1,89	3,76	2,06	2,21
Dynamics, Mathematical Analysis & Artificial Intelligence	1,10	1,72	1,40	1,82	1,80	1,58	1,64
Towards personalized medicine	1,23	1,41	1,94	1,38	1,94	1,63	1,69

Indicator 6:% of International Doctoral Students (U)

Value as of 31 December 2018 (generated automatically from POL-on system)	Value as of 31 December 2025
1,89	2,40

Indicator 7: Doctoral Students' Articles in Q1 Journals (U)

Average of values for each year in the period 2020–2024
0,09

Indicator 9: Number of inventions protected by foreign patents (U)

Value for the period 2014–2018	Value for the period 2021–2025
11	13

A list of the most important inventions implemented for the first time in years 2014–2018 protected by foreign patents granted to the university (up to 5 implementations) which comprises a title of invention, a patent ID, place and year of implementation, a name of implementing entity and implementation description (up to 12500 characters, including spaces, for each implementation).

Attachment no6, File: NCU - list of inventions.pdf

Indicator 11: Revenues from commercialisation (U)

Reference years for base values						Reference years for target values
2013	2014	2015	2016	2017	Value for the period 2013–2017	Value for the period 2020–2024
100 000	2 352 390	895 955	1 544 709	1 745 830	6 638 884	7 345 219,00

Indicator 12: Foreign accreditations (U)

Number of accreditations as of the date of application submission	Number as of 31 December 2025
2	4

A list of accreditations as of the date of application submission which comprises a name of accreditation institution and a date when an accreditation has been granted.
Attachment no7, File: NCU - foregin acreditations.pdf

d) INDICATORS DETERMINED BY A UNIVERSITY			
No.	Indicator title	Reference years for base values	Reference years for target values
1.	A number of young scientists in priority research teams of the university (objectives concerning professional development of staff - part 4)	2019 - 93	Average number for 2020-2025 (measured on April 1st each year) - 130
	Additional information	In 2019 we initiated a unique contest for research teams in our university to promote cross-disciplinary research activities. The applications were evaluated only by external, distinguished scientists. We will organise similar contests in the future and promote young scientists as group members and leaders.	
2.	A number of staff members and students who completed TRIZ training which develops skills useful for innovations	2019 - 0	Total number during the project duration (2020-2025) - 100
	Additional information	The indicator will be monitored every year with the goal to reach 100 people who completed the TRIZ training. We are planning to train 40 people until the interim evaluation.	
3.	A number of administrative staff members in international and grant offices (objectives concerning quality of university governance - part 5)	2019 - 43	Average number for 2020-2024 measured on June 1st each year - 60
	Additional information	A number of administrative staff members in key offices has a strong influence on the quality of support offered to scientists. We intend to measure the number of administrative staff in the office of internationalisation and grant office, which are critical for the university development.	