

The way to transform Ukrainian Universities' difficulties into new opportunities



KARAZIN UNIVERSITY
CLASSICS AHEAD OF TIME

V. N. Karazin

Kharkiv National University



SCHOOL OF _____
MATHEMATICS AND COMPUTER SCIENCE

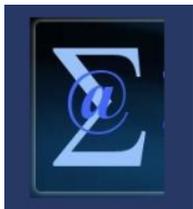


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**DEPARTMENT OF THEORETICAL AND APPLIED
COMPUTER SCIENCE**

with deep gratitude to Germany and German people
for their great help to Ukraine and Ukrainians!!!



Karazin University (<https://karazin.ua/en/>)

- Leader of Ukrainian Higher Education by QS World University Ranking, <https://www.topuniversities.com/university-rankings/world-university-rankings/2023>.
- Was founded in 1804 and provided training for higher-qualified specialists throughout its history (3 Nobel laureates).
- Over 130 000 people have graduated from the University during its existence.
- The only university in Ukraine where three Nobel Prize laureates studied and worked
- Is part and parcel of the intellectual, cultural, and spiritual history of Ukraine.



Karazin University (<https://karazin.ua/en/>)

- Consists of 22 Schools and education & research institutes.
- 20 724 degree seekers study at the Schools, the Institute of International Education for Study and Research, the Center for Pre-University Education.
- 16 260 students, 4 066 international students, 301 postgraduate and doctoral students.
- 438 doctors of sciences, professors, more than 1 274 PhDs, associate professors
- 30 academicians and corresponding members of the National Academy of Sciences of Ukraine and branch academies.
- Prepares specialists in 115 majors, covering the whole range of modern classical university education.
- The Central Scientific Library contains 3 500 000 items. including 50 000



School of Mathematics and Computer Science

- Proud of its famous scholars like M. Ostrogradsky (1801 -1862), A. Lyapunov (1857 - 1918), S. Bernstein (1880 - 1968), A. Pogorelov (1919 - 2002), V. Marchenko (1922), V. Drienfeld (1954).
- Trains students in 3 main specialties: Fundamental Mathematics, Applied Mathematics, Theoretical and Applied Computer Science.
- Main principle of teaching and learning - the close relationship between educational and research activities based on modern mathematics.
- Has intensive academic and scientific international cooperation.
- Majority of graduates hold prestigious positions in universities, research institutions and companies working in the field of science-intensive technologies all over the world.



Department of Theoretical and Applied Computer Science

- Provides training in bachelor (4 years, 240 ECTS) and master degree (2 years, 120 ECTS) educational programmes.
- Makes accent on basics and fundamentals of math and Computer Science especially for first years of studies.
- Trains specialists in modelling complex processes and systems, design and development of distributed programming systems, parallel computing, multilevel intellectual data analysis, big data processing including modern methods of artificial intelligence and machine learning.



Department of Theoretical and Applied Computer Science

- Implements best practices of modern IT area.
- Has long-standing and quite successful experience in cooperation with European Universities in double degree Master's diploma (fourteen years with Cote d'Azur University, France and five years with L'Aquila University, Italy).
- Even beginning from the 3d year of studies students are competitive and in high demand in the IT labour market.



Consequences of Russian invasion

- Significant damage and broken parts of University buildings because of regular shelling
- Students, academics and research staff spread all over Europe and North America
- All students and staff wherever they are (especially those in Ukraine) in stressful situation in every sense

BUT!!! we continue working (Munich)

AND!!! We are ready to consider our difficulties as our opportunities!!!

Kulturzentrum GOROD (Munich)

- Public organisation, more than 25 years old (newgorod.org). The head – Nina Vischnevskaja – is the alumnae of Karazin University.
- Has activities in different areas: educational projects for schoolchildren and youth, summer schools, international projects, cultural life for children and adults, etc.
- Regularly holding mathematical summer schools for youth from Ukraine and different European countries.
- Has long standing cooperation with the Karazin University's School of Mathematics and Computer Science.
- With the beginning of the war more than 160 students and some teachers occurred in Munich and united around the Kulturzentrum Gorod.

Kulturzentrum GOROD (Munich)

- Helped Ukrainian refugees since the first days of war in Ukraine.
- Initiated the project on creating the base and conditions for Ukrainian children to continue school learning.
- Created the possibilities for students to enter Karazin University and study there being in Germany.
- 6 specialties and 168 refugee students are now studying on the base of this Kulturzentrum being the students of Karazin University
- Provides official German courses for Ukrainian students after their university lessons.
- That was a volunteer project funded mainly by sponsors but it required great efforts and much hard work!!!



Kulturzentrum GOROD (Munich)







Aims of collaboration with Bavaria Universities: Math and Computer Science

- Keeping Karazin University working despite the Russian invasion.
- Supporting Ukrainian refugee students in Munich and helping all refugee students in Germany to become better
- Strengthening the integration of Karazin University in the European educational and scientific space.
- Contributing to the post-war reconstruction of Ukraine. The future of Ukraine is directly related to the future of Europe.

Qualified and well-educated youth will be doing this future.



Possible benefits for Bavarian Universities

- Chance to provide well-educated and mathematically strong students as candidates for Master's degrees and the PhD programmes.
- Possibility to widen research areas and participate in joint research projects in AI, image recognition, data science, and robotics, which are especially important now in the defense issues, etc.
- Reason to think about new specializations (new elective courses) to propose for students, organizing joint supervision of students' scientific research, etc.



What we have now

- 67 first year students of Karazin University, Computer Science and Applied Mathematics specialties, in Kulturzentrum GOROD, Munich, eager to continue their education.
- 45 students of Liceum (10th and 11th year) in Kulturzentrum GOROD, Munich, eager to enter next years Karazin University.
- All of them by September, 2023 will have B1 German.
- Their visa expired in 2024 and the war ends.



What we are looking for

A programme of double diploma for bachelor students majoring in Informatics and in Statistics and Data Science.

- Our students are of high level. In fact, they are at the top 10% (usually even 5%) during all the years of double diploma master degree programmes The majority of them were proposed the PhD programme with full funding.
- We have developed together with European partners (France) criteria of selection and selection procedure for candidates.
- Any testing of students level from Bavaria Universities to check their suitability for German programmes would be appreciated.

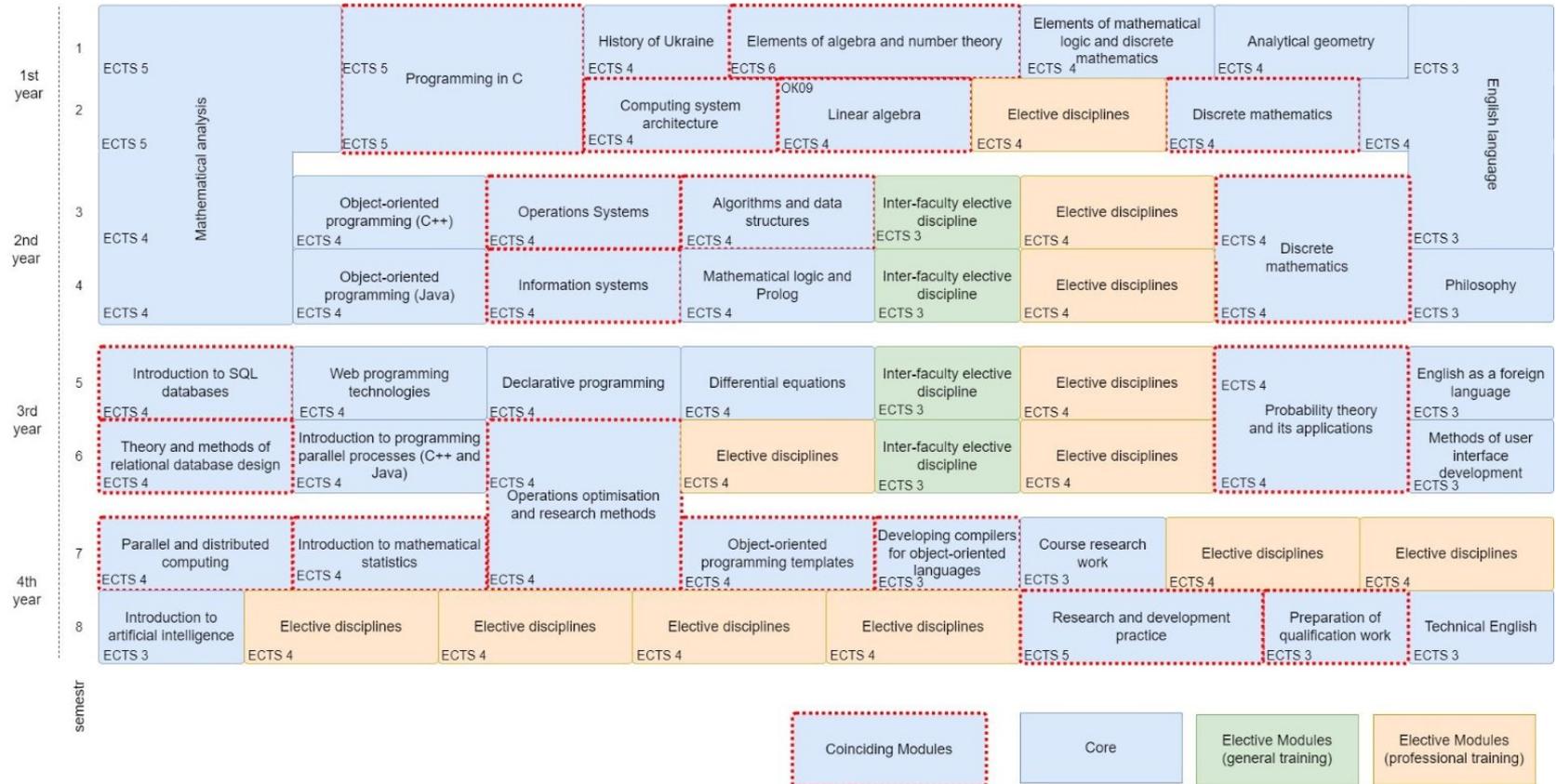


How it can be implemented

- All our educational programmes and syllabuses correspond to Computing Curricula.
- Majority of core courses match with the corresponding courses in leading Bavarian universities (schema follows).
- As Ukraine has 4-year bachelor education, the first year at Karazin University can be considered as preparatory.
- 3 years of double diploma educational programme can be divided between Karazin and partner universities according to the signed in advance memorandum.
- We have well-established procedure of programmes recognition and candidates selection verified over the years with universities of France and Italy.



How it can be implemented





What else we are looking for

- Joint applications for educational and scientific grants, participation in Erasmus+ and Erasmus Mundus programmes (in which we have long standing expertise). Here are some areas of scientific research of our Department of Theoretical and Applied Computer Science: <https://sites.google.com/karazin.ua/tacs-eng/science?authuser=0>
- Grants to support mobility of Ukrainian academic staff: they are coming from Ukraine to Munich to deliver offline lectures to students in Kulturzentrum GOROD
- Organization of Summer Schools for Ukrainian students and teaching staff with the participation of German University professors (IT, Applied Mathematics, Language courses...). The majority of our students are fluent with English
- Sharing resources for parallel and distributed computing (clusters, servers, etc.)
- We are open to and would be grateful for every other proposal.



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Thank you for your attention!!!

Contacts:

Name: Iryna Zaretska, professor
professor

Email: zaretskaya@karazin.ua

Phone number: +4915128505967

Name: Maryna Vladymyrova,

Email: vladymyrova@gmail.com

Phone number: +4917634662292