



Society of Physicists of
Macedonia



Faculty of Natural Sciences
and Mathematics - Skopje



Balkan
Physical Union

PROGRAM

7th Balkan Physics Olympiad

26-30 June 2025

Ohrid, Macedonia

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Ss. Cyril and Methodius
University in Skopje

Faculty of Natural Sciences and
Mathematics



Welcome message

Dear students, professors, colleagues, and guests,

It is our great pleasure to welcome you to the 7th Balkan Physics Olympiad – BPO 2025. We are honored to host this prestigious scientific event in Macedonia, in the picturesque city of Ohrid, a place of history, learning, and natural beauty.

We would like to sincerely thank the Balkan Physical Union for entrusting us with the organization of this important Olympiad. It is a privilege to gather some of the brightest young minds in physics from across the Balkan region and beyond.

Just like in previous editions, the Balkan Physics Olympiad will be much more than a competition. It will be a celebration of knowledge, curiosity, and scientific spirit. Through challenging problems, thoughtful discussions, and inspiring exchanges, we are confident that all participants will experience personal growth and forge lasting friendships.

In addition to the official program, we invite you to explore the cultural and natural treasures of Ohrid, a UNESCO World Heritage site. We hope you enjoy the charm of the old town, the serenity of Lake Ohrid, and the warmth of Macedonian hospitality and cuisine.

We wish all participants a fair and successful competition, and a memorable and joyful stay here in Ohrid!

Best regards,

Organizing Committee of BPO 7

BALKAN PHYSICAL UNION (BPU)

The Balkan Physical Union (BPU) is a non-governmental, non-profit scientific association founded in 1985. Its mission is to promote physics research, education, and collaboration across the Balkan region, and to foster peace and friendship among Balkan countries .

The first foundational meeting took place in Pristina in 1985, led by Professor Ioan Ursu (Romania) and Professor A. Milojević (Yugoslavia), resulting in the official signing of the Union's Constitution on 12 June 1987 in Bucharest. Original signatory members included Albania, Bulgaria, Greece, Romania, and Yugoslavia; Turkey joined subsequently.

The BPU's governance structure includes an elected President, Vice-President(s), Secretary General, and an executive Council comprising representatives from each member country. Its core objectives are to:

- Strengthen cooperation in physics research and education among Balkan countries;
- Support the development of physics teaching at all educational levels;
- Encourage scientific exchange and joint events, including conferences, workshops, and Olympiads;
- Serve the broader regional mission of peaceful collaboration and mutual assistance.

For more information about the Union's history, mission, and activities—including its triennial BPU Congress, training schools, and the Balkan Physics Olympiad (BPO) series—please visit the official website: <http://www.balkanphysicalunion.info/>

SOCIETY OF PHYSICISTS OF MACEDONIA (SPM)

The Society of Physicists of Macedonia (SPM) is a professional, non-governmental and non-profit organization that brings together physicists, physics educators, researchers, and students across Macedonia. Established in 1949, it is one of the oldest and most active scientific societies in the country.

The Society's mission is to promote the advancement of physics as a science, support high-quality physics education at all levels, and foster collaboration among the academic, educational, and research communities. Over the decades, the Society has played a central role in developing a strong physics culture in Macedonia, through national and international activities.

The Society is a member of the Balkan Physical Union (BPU) and a member of the European Physical Society (EPS). It organizes the Biennial Conference of Physicists, which gathers physics professionals from the country and the wider region. SPM also regularly hosts schools for young physicists, coordinates national physics competitions, and leads the preparation of Macedonian teams for international Olympiads such as the IPhO, EuPhO, BPO, and IJSO. For more information about the activities, history, and membership of the Society of Physicists of Macedonia, please visit the official website: <https://dfm.org/>

FACULTY OF NATURAL SCIENCES AND MATHEMATICS (FNSM) IN SKOPJE

Established in 1946 as part of the Ss. Cyril and Methodius University in Skopje, Macedonia, it is the oldest and largest university-level education institution which offers education in the natural sciences (biology, chemistry, geography, physics), ethnology and anthropology, and mathematics. The Seismological Observatory in Skopje is also part of the Faculty.

Nowadays, the FNSM offers training in physics (theoretical and applied), in all three study cycles of higher education (bachelor, master, and doctoral studies). For more information visit <https://pmf.ukim.edu.mk/> and <https://www.ukim.edu.mk/>

Program

Day	Students		Leaders		Scientific committee	
	Time	Activity	Time	Activity	Time	Activity
Thursday 26.06	08.00-23.59	Arrival and registration	08.00-23.59	Arrival and registration	08.00-23.59	Arrival and registration
	13.00-15.00	Lunch (Congress Centre)	13.00-15.00	Lunch (Congress Centre)	13.00-15.00	Lunch (Congress Centre)
	19.00-21.00	Dinner (Congress Centre)	19.00-21.00	Dinner (Congress Centre)	19.00-21.00	Dinner (Congress Centre)
Friday 27.06	07.30-09.30	Breakfast (Congress Centre)	07.30-09.30	Breakfast (Congress Centre)	07.30-09.30	Breakfast (Congress Centre)
	10.00-10.30	Opening ceremony (Congress Centre)	10.00-10.30	Opening ceremony (Congress Centre)	10.00-10.30	Opening ceremony (Congress Centre)
	11.00-11.30	Bus trip to Ohrid	11.00-11.30	Bus trip to Ohrid	11.00-13.00	SC committee meeting (Congress Centre)
	11.30-14.30	Excursion to Ohrid	11.30-14.30	Excursion to Ohrid	13.00-15.00	Lunch (Congress Centre)
	14.30-15.30	Lunch (Amfora restaurant)	14.30-15.30	Lunch (Amfora restaurant)	15.00-19.00	SC committee meeting (Congress Centre)
	15.30-19.00	Free time in Ohrid city	15.30-19.00	Free time in Ohrid city	19.00-22.00	SC Dinner (Outside Congress Centre)
	19.30-21.00	Dinner (Congress Centre)	19.30-21.00	Dinner (Congress Centre)		
	22.00	Students are obligated to be in their rooms	22.00	Leaders are obligated to be in their rooms		
Saturday 28.06	07.00-08.30	Breakfast (Congress Centre)	07.00-08.30	Breakfast (Congress Centre)	07.00-08.30	Breakfast (Congress Centre)
	09.00-09.30	Bus trip to the Faculty of Tourism	09.00-09.30	Bus trip to the Faculty of Tourism	09.00-09.30	Excursion to Ohrid
	10.00-14.00	Competition Faculty of Tourism	10.00-14.00	Free time in Ohrid	09.30-14.00	Excursion to Ohrid
	14.30-15.30	Lunch (Faculty of Tourism)	14.30-15.30	Lunch (Faculty of Tourism)	14.30-15.30	Lunch (Faculty of Tourism)
	15.30-16.00	Bus trip to St. Naum	15.30-16.00	Bus trip to St. Naum	15.30-16.00	Bus trip to Congress Centre
	16.00-18.30	Visit to the St. Naum complex	16.00-18.30	Visit to the St. Naum complex	16.00-19.00	SC committee meeting
	19.00-21.00	Dinner (Congress Centre)	19.00-21.00	Dinner (Congress Centre)	19.00-21.00	Dinner (Congress Centre)
	21.00-22.00	Free time	21.00-22.00	Free time	19.00-23.59	SC committee meeting
Sunday 29.06	07.30-10.30	Breakfast (Congress Centre)	07.30 -09.00	Breakfast (Congress Centre)	07.30-09.00	Breakfast (Congress Centre)

	10.30-13.00	Free time	09.00-13.00	Moderation	09.00-13.00	Moderation
	13.00-15.00	Lunch (Congress Centre)	13.00-15.00	Lunch (Congress Centre)	13.00-14.30	Lunch (Congress Centre)
	15.00-18.00	Free time	15.00-18.00	Free time	14.30-17.30	Bus trip to St. Naum
	18.00-19.00	Award ceremony (Congress Centre)	18.00 -19.00	Award ceremony (Congress Centre)	18.00-19.00	Award ceremony (Congress Centre)
	20.00-23.00	Gala dinner with farewell party (Congress Centre)	20.00-23.00	Gala dinner with farewell party (Congress Centre)	20.00-23.00	Gala dinner with farewell party (Congress Centre)
Monday 30.06	07.30-09.30	Breakfast (Congress Centre)	07.30-09.30	Breakfast (Congress Centre)	07.30-09.30	Breakfast (Congress Centre)
	09.30-	Departure	09.30-	Departure	09.30-	Departure

Committees

Scientific Committee (SC)

Chair of the SC: Irina Petreska
Faculty of Natural Sciences and Mathematics
Ss. Cyril and Methodius University in Skopje

Organizing Committee

Chair of the OC: Lambe Barandovski

Members:

- Irena Zlatanovska
- Boce Mitrevski
- Trifce Sandev
- Elena Vchkova Bebekovska
- Ljubica Dimova
- Goce Gegovski
- Vera Zoroska
- Vojo Mitrevski
- Pece Trajanovski
- Elena Lefkova
- Tamara Najdovska
- Marko Stojanovski

BPO7 rules and prizes

Rules

- The Balkan Physics Olympiad (BPO) is organized once a year, either at the end of the school year (June-July) or at the beginning of the next school year (September-October). The exact date is proposed by the organizing country, which must take into account the calendar of other international competitions.
- The BPO can only be held in one of the BPU member countries, and only pupils from the member countries can officially participate in the contest. Participation can also be online, but on-site participation is highly encouraged.
- The member countries of BPU are: Albania, Bulgaria, Cyprus, North Macedonia, Montenegro, Greece, Republic of Moldova, Romania, Serbia and Turkey. At the end of each competition, the host country for the next edition is proposed based on the principle of organization by rotation by the member countries.
- In order to ensure optimal conditions for the event, the host country will propose the venue, as well as a possible participation fee that strictly has to cover the costs of the organization. The BPU Executive Committee will approve the fee and, depending on the available financial resources, will be able to apply a policy of total or partial coverage of participation fees for member countries that request it.
- The host country may also invite other pupils as unofficial participants. If the respective students represent a certain guest country, they must be accepted by all BPU member countries.
- Pupils who are participating in the BPO 2025 **must be middle school or high school pupils, born after 1.1.2008**, or with a maximum of 3 months before this date, if they are part of the same year of study as the students accepted according to the above-mentioned age limit.
- Each country can propose up to four problems and they should be e-mailed to the Chairman of the Scientific Committee. The proposed problems should include their solutions.
- The official language of the BPO is English. The team leaders (or additional translators) of each country will be aiding with the translation of the questions in the official language of the country. Participant pupils will solve the problems in the official language of their country.

Prizes

The following prizes (medals) will be awarded:

- Gold medals (best 10% of the participants from the member states)
- Silver medals (next 15% of the participants from the member states)
- Bronze medals (next 25 % of the participants from the member states)

- Honorable Mention (the next 17 % of the participants from the member states)

The participants from the guest countries will receive supplementary prizes (medals), **according to the total number of points they obtain and the cut-offs established for the medals, taking into account only the students from the member countries.**

A **certificate of Special Prize** shall also be awarded to each pupil who has obtained full marks on at least one problem.

A Certificate of Participation shall be given to all contestants.

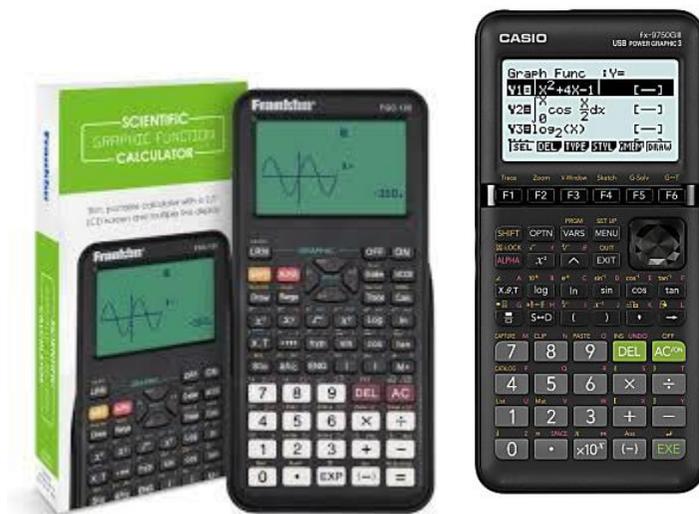
Note: The medals, certificates and other prizes will be announced at the official Award Ceremony. Effectively, they will be given by the Organizing Committee to the winners who are present at the ceremony or will be sent to the team leaders from each country by mail.

DURING THE COMPETITION:

Students should have at least one ruler 30 cm long, and a calculator with no more than three lines on the screen. **Programmable calculators are not allowed.** On the pictures below are given calculators that are recommended for use and calculators that will not be allowed for use.



Example of calculators that are recommended for use



Example of calculators that will not be allowed for use

Venues

Ohrid is a city located on the southwest of the country and is the seat of the Ohrid Municipality. It is the largest city on Lake Ohrid and the eighth-largest city in the country, with the municipality recording a population of over 42,000 inhabitants as of 2021. Ohrid is known for once having 365 churches, one for each day of the year, and has been referred to as the "Jerusalem of the Balkans". The city is rich in picturesque houses and monuments, and tourism is predominant. It is located southwest of Skopje, west of Resen and Bitola. In 1979 and in 1980, respectively, Ohrid and Lake Ohrid were accepted as Cultural and Natural World Heritage Sites by UNESCO. Ohrid is one of only 40 sites that are part of UNESCO's World Heritage, which are Cultural as well as Natural sites.

Climate. The maximum daily air temperatures in June vary from 22°C to 30°C, rarely exceeding 30°C. The water temperature is around 20 °C. Forecast for the next period can be found here:

<https://www.accuweather.com/en/mk/ohrid/1172/weather-forecast/1172>

What to see in Ohrid

https://www.tripadvisor.com/Attractions-g303864-Activities-Ohrid_Southwestern_Region

Accommodation

1. The official BPO7 venue is CONGRESS CENTRE, Ohrid:

<http://www.kco.ukim.mk/>

The Congress Centre is located 6 km from the Centre of Ohrid and 17 km from the Ohrid airport

<https://ohd.airports.com.mk/>

2. The scientific committee and some of the guests will be accommodated in the nearby hotel METROPOL (upon arrival in Congress centre)

<https://metropol-ohrid.com.mk/>

The Metropol hotel is 6.5 km from the Centre of Ohrid and 17.5 km from the Ohrid airport

Useful information

Currency

The local currency is the **denar** (abbreviation **MKD**, plural **denari**). If you carry cash, you will have to exchange foreign currency to denars since foreign currency is not legal tender in the country. You can exchange currency in the hotel, in a bank office, or in a dedicated exchange office (these often offer the best exchange rates). In the middle of June the exchange rates were:

-  1 EUR = 61.59 MKD
-  1 USD = 53.51 MKD

Most shops and service providers also accept payment by debit or credit card. These include: Visa, Maestro, Master Card, Diners, etc. (the list is not exhaustive, but make sure to ask if your card is accepted before paying).

The Foreign Currency Exchange Rates List of the National Bank

https://www.nbrm.mk/kursna_lista-en.nspix

OTHER INFORMATION

Ohrid airport

<https://ohd.airports.com.mk/>

Transportation alternatives from Ohrid airport

<https://ohd.airports.com.mk/en-EN/passenger-guide/to-from-the-airport>

Skopje Airport

<https://skp.airports.com.mk/>

Transportation alternatives from Skopje Airport

<https://skp.airports.com.mk/en-EN/passenger-guide/to-from-the-airport>

Skopje Bus station

<https://ruleturs.techinreact.com/>

Faculty of tourism and hospitality – Ohrid

<https://ftu.uklo.edu.mk/en/>

Restorant Amfora

<https://www.restorani.com.mk/en/restoran/restoran-amfora-ohrid>

If you need transport while staying in Ohrid we recommend to use the taxi services of taxi “White Mercedes” (BEL MERCEDES) +389 70 259 180 or +389 75 259 180. Obligatory when you call to state that you are calling with the recommendation of the Society of physicists of Macedonia.

Prices for the taxi services:

Congress centre – Ohrid Center 300 MKD (approximately 5 Euro)

Congress centre – Ohrid Airport 1200 MKD (approximately 20 Euro)

Congress centre – Ohrid Bus station 350 MKD (approximately 6 Euro)

OTHER INFO

- The local time is Central European Time (CET) which is GMT +1
- The country code for Macedonia is +389
- Tap water is safe for drinking
- The number for emergencies is 112 (police, ambulance, fire department)
- We recommend light clothes and sunscreen, and wearing hats during the excursion.