







INTRODUCTION TO CONSERVATION & RESTORATION OF ROMAN POTTERY AND GLASS: STOBI, NORTH MACEDONIA Course ID: ARCH 365BD

June 1–June 21, 2024

Academic Credits: 4 Semester Credit Units

FIELD SCHOOL DIRECTOR(S) Ms. Bilyana Jankulovska, Senior Conservator, National Institution Stobi, Republic of N. Macedonia

PROJECT COORDINATORS

Dr. Angela Pencheva, Project coordinator (Stobi), Balkan Heritage Foundation Director <u>angelapbh@gmail.com</u>

INSTRUCTORS

Dr. Eva Todorova – Drawing technician, National Archaeological Institute with Museum, Bulgarian Academy of Sciences



This program is a short introduction to archaeology field conservation. It is designed to present students with the fundamentals of conservation and restoration work and a taste for the rigors of field work.

OVERVIEW

This course is focused on the conservation and restoration of Roman and Late Roman pottery and gives basic introduction to treatment, conservation and restoration of glass objects.

It consists of three weeks and will take place at the site of Stobi, Republic of N. Macedonia. Stobi was an important Roman city and reached its zenith of power during the $1^{st} - 3^{rd}$ centuries CE.

The main goal for this program is to provide theoretical and hands-on training experience on pottery and glass conservation. It does so through the exposure of students to the conservation techniques and specifics of two different materials, enabling them to evaluate and appreciate similarities and differences in conservation problems, approaches, methods, technique, design and material choice applied on different types of artifacts.

The pottery and the glass vessels for the workshop in the Republic of N. Macedonia come from the excavations of the Roman and Early Byzantine city of Stobi and are provided by the National Institution Stobi (NI Stobi). These are mainly locally produced Roman and Late Roman ceramic shapes.

Students begin their training with replicas of ancient vessels and then progress to originals once they reach an acceptable level of skill, accuracy and precision. Most students will be able to master conservation and restoration efforts within the course of this field school and expect to complete work on 2-5 artifacts by the end of the program, depending on the initial state of objects' conservation, the necessity of conservation treatment and the individual performance of the student.

Upon successful completion of the course, they will be prepared to take part in projects for conservation, restoration and documentation of archaeological pottery, under the supervision of professional conservators and restorers.

ACADEMIC CREDIT UNITS & TRANSCRIPTS

Credit Units: Attending students will be awarded 4 semester credit units (equivalent to 6 quarter credit units) through our academic partner, Connecticut College. Connecticut College is a highly ranked liberal arts institution with a deep commitment to undergraduate education. Students will receive a letter grade for attending this field school (see assessment, below). This field school provides a minimum of 180 hours of experiential education. Students are encouraged to discuss the transferability of credit units with faculty and registrars at their home institution prior to attending this field school.

Transcripts: An official copy of transcripts will be mailed to the permanent address listed by students on their online application. One more transcript may be sent to the student's home institution at no cost. Additional transcripts may be ordered at any time through the <u>National Student Clearinghouse</u>.

PREREQUISITES

None. This is hands-on, experiential learning and students will work in the lab and learn how to conduct conservation, restoration and documentation work. These activities involve patience, careful work and concentration, and thus require a measure of acceptance that is not found in the typical university learning environment. Students are required to come equipped with sufficient excitement and the understanding that conservation and restoration endeavor requires hard work, patience, discipline, close concentration and attention to detail.

The Conservation & Restoration Field School will host students and professionals from all over the world. With such an international team, it is vital that all students respect the IFR code of conduct, each other's cultures, and local organizational, social and cultural rules and laws.

COURSE OBJECTIVES

The objective of this program is to prepare students to take part in archaeological ceramics conservation and restoration activities. The activities in this program will include the following:

- 1. Introduction to fundamental ethical principles of conservation and restoration. These include among others the principles of reversibility, compatibility, re-treatability and authenticity, and the principle of minimal intervention. Detailed documentation process and basic requirements for conservation materials are also discussed.
- 2. Introduction to the aesthetic principles of conservation: partial or complete restoration of the original appearance of the object without eliminating the impact of time on it, preserving the artistic values of the artifact, hiding or pointing out restored parts.
- 3. Presentation of the main causes for deterioration, especially upon excavation.
- 4. Introduction to preliminary pottery and glass analyses and condition assessment of the finds: observations under low and high magnification, sampling and samples, instrumental analyses. Results as a base for informed conservation treatment proposals.
- 5. Training through practical exercises: basic conservation and restoration activities: damage assessment and classification, conservation plan, mechanical and chemical cleaning, desalination and consolidation of pottery shards, reassembling fragmented objects, in-filling, retouching, and detailed documentation.
- 6. Introduction to conservation documentation, including its visual, historical, and technical aspects as well as conservation treatment performed on the object.
- 7. Introduction to the post conservation monitoring process.
- 8. Introduction to technological characteristics and technology of ancient pottery and glass and their changes through time.
- 9. To prepare students to create, organize and maintain artifacts and conservation databases.
- 10. Collection and keeping both data and metadata about objects and their documentation safe.
- 11. Introduction to the archaeological and historical contexts of the restored materials sites, cultures, research problems, etc.
- 12. Introduction to health and safety requirements in a conservation lab.

LEARNING OUTCOMES

Students participating in this field school will develop basic/further practical skills (depending on the participant's initial level of qualification) in ancient pottery and glass conservation and documentation, leaving them better prepared for future conservation projects. They will have certain knowledge of the history and archaeology of Stobi and ancient Macedonia during the Roman and Late Roman periods, as well as the forms, types and technology of Roman and Late Roman pottery and glassware. During the outlined activities participants will learn skills transferable outside of excavations, such as analytical thinking, teamwork, the ability to meet deadlines and adapt to outside conditions, which will aid them when seeking employment in any work field.

ASSESSMENT

Students will be graded based on their work as follows.

% Of Grade	Activity
20%	Roman and Late Roman Pottery Conservation
20%	Conservation of ancient Glass

15%	Attendance
15%	Technical drawing of pottery & digitizing of the graphic documentation
10%	Final Presentation
20%	Final Exam

ATTENDANCE POLICY

The required minimum attendance for the successful completion of the field school is 85% of the course hours. Any significant delay or early departure from an activity will be calculated as an absence from the activity. An acceptable number of absences for a medical or other personal reason will not be taken into account if the student catches up on the field school study plan through additional readings, homework or tutorials with program staff members.

COURSE SCHEDULE

All IFR field schools begin with a safety orientation. This orientation addresses local and program protocols concerning student behavior, appropriate attire, local practices and sensibilities that may be unfamiliar, potential fauna and flora hazards, IFR harassment and discrimination policies, and the student Code of Conduct.

MODULE I - Theoretical module (25 hours for both workshops). Covers the following topics:

- 1. Roman and Late Roman pottery and glass history and technology. This will include production technology, physical and chemical properties, shape & design.
- 2. Conservation documentation. Lectures focusing on visual documentation, including regular photography, software manipulation (Corel Draw) and data & metadata documentation of visual record, technical photography.
- 3. Analytical methods used to determine the chemical composition and the physical properties of artifacts, the damaging processes influencing the artifacts' condition upon excavation.
- 4. Preventive conservation treatment in situ and subsequent lab conservation treatment of retrieved objects.
- 5. Lectures focusing on the historical and archaeological context of the treated materials.

MODULE II – Practicum (approx. 75 hours for both workshops). Consists of four components:

- 1. Workshops dedicated to materials and production, which include the full production of replica vessels and explore the challenges related to production technology as practiced in the past.
- 2. Workshops dedicated to pottery and glass photographic and graphic technical documentation.
- 3. Workshops dedicated to ceramics and glass conservation.

MODULE III - Excursions accompanied by lectures, presentations and study visits to sites of historical/archaeological significance such as the town of Bitola (Archaeological Museum) and the Heraclea Lyncestis excavation site, the town of Ohrid (Ancient Lychnidos, UNESCO World Heritage Site) in Republic of N. Macedonia, Pella and Vergina (UNESCO World Heritage Sites) in Greece.

MODULE IV – Homework (est. 10 hours for both projects) will be assigned to all students, which will consist of editing and processing students' conservation documentation (journal, conservation forms, drawings, photos, etc.) and preparing presentations and reports.

Date Mo	orning	Afternoon
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Day 1	Arrive by noon at Skopje Airport in North Macedonia or at Thessaloniki Airport in Greece, arrange in advance a pickup with BHF logistic coordinator	Traditional Macedonian welcome dinner.
Day 2	Presentation of the Balkan Heritage Field School, NI Stobi and collaborating universities & institutions, the project and the participants. Icebreakers and orientation.	Sightseeing of the <u>archaeological site of Stobi</u> .
Day 3	 Lecture: Material Science and Technology. Clay properties and changes during firing. Lecture & Workshop: typology and chronology of Roman and Late Roman pottery with examples from Stobi. Sorting and selecting different types of Roman and Late Roman pottery shards 	 Lecture: Deterioration of ceramics objects. Soluble salts, porosity, firing; choosing the most appropriate conservation treatment for each object Workshop: Cleaning and sorting of Roman and Late Roman pottery shards
Day 4	Lecture: Conservation and restoration of Roman and Late Roman Objects. Basic steps and principles. Ethics and conservation Cleaning of ceramic objects: methods of dirt removal, mechanical and chemical methods of salt efflorescence removal, desalination of the ceramic body. Extraction of cleaning and/or desalination agents from the ceramic body. Consolidation – need, methods and materials, requirements. Assembly of the fragments – adhesives and requirements. Methods of temporary fixing. Molds and temporary supports. Gap filling, modeling and finishing touches. Lecture: Required documentation for pottery and glass conservation. • Graphic documentation • Graphic reconstruction • Photographing • Conservation journal • List of used materials and safety data sheets	Study Excursion & Workshop: Visit to a local traditional pottery workshop in the town of Veles. <i>Experimenting with pottery making</i>
Day 5	Lecture & Workshop: Introduction to technical photography	 Workshop: Conservation and restoration of Roman and Late Roman Objects. Preliminary assembly of fragmented objects – methods of temporary fixing of the loose parts. Final assembly – fitting the fragments together, application of adhesive and cleaning of the excess adhesive around the joints. Methods of temporary mechanical stabilization during adhesive setting.
Day 6	Workshop : Conservation and restoration of Roman and Late Roman Objects.	Lecture & Workshop: Technical drawing documentation. Pottery fragments

Day 7	 Gap filling – methods. Preliminary processing of break lines and surrounding areas. Temporary protection. Temporary supports for plaster in-fills. Additional modeling of the reconstructions. Cleaning of the areas surrounding the in-fill. Documentation – finishing touches. Workshop: Conservation and restoration of Roman and Late Roman Objects. Conservation treatment of original objects. General instructions. Assigning a selected number of objects to each participant. Specifics of working with original objects. Removal of unwanted material (soil, salts, etc.) and extraction of cleaning agents. Assembly of the fragments with appropriate adhesive, removal of excess adhesive. In-fills and their 	Lecture & Workshop : Technical drawing documentation. Entire vessels.
	additional processing.	
Day 8	Excursion: Guided visit to Bitola and the ancient city	of Heraclea Lyncestis
Day 9	Excursion: Guided visit to Ohrid: Ancient Lychnidos (UNESCO World Heritage Site) and Ohrid lake	
Day 10	Workshop: Conservation and restoration of Roman and Late Roman Vessels.	Workshop: Conservation and restoration of Roman and Late Roman Vessels.
	Conservation treatment of original objects. Continued (the exact activities depend on the number of assigned objects and the complexity of each object, as well as on the individual progress of each participant. All activities are closely supervised by and discussed with professional conservator)	Conservation treatment of original vessels. Continuation: <i>refining the plaster, cleaning the</i> <i>vessel from extra plaster, consolidation</i>
Day 11	Workshop: Conservation and restoration of Roman and Late Roman Objects	Workshop : Archaeological Documentation – Digitalization of pottery graphic documentation
	Conservation treatment of original objects. Continued (the exact activities depend on the number of assigned objects and the complexity of each object, as well as on the individual progress of each participant. All activities are closely supervised by and discussed with professional conservator)	
Day 12	Workshop: Conservation and restoration of Roman and Late Roman Objects. Conservation treatment of original objects. Continued (the exact activities depend on the number of assigned objects and the complexity of each object, as well as on the individual progress of each participant. All activities are closely supervised by and discussed with professional conservator)	Workshop : Archaeological Documentation – Digitalization of pottery graphic documentation.
Day 13	Workshop : Conservation and restoration of Roman and Late Roman Objects.	Workshop : Accomplishing the conservation documentation for the conserved vessels.

	Final conservation treatment of original objects.	
	Continued (the exact activities depend on the number of assigned objects and the complexity of each object, as well as on the individual progress of each participant. All activities are closely supervised by and discussed with professional conservator)	
Day 14	Preparation of PowerPoint presentation of the workshop's results.	Presentation of the Workshop results. Discussion with the instructors. Evaluation meeting and conclusion.
Day 15	Day off	
Day 16	Guided visit of Pella and Vergina (UNESCO World He	ritage Site), Greece
Day 17	Lecture. History of Pre-Roman and Roman glass technology. Chemical composition of glass. <i>Forms</i>	Lecture. Basic techniques in ancient glass conservation and restoration.
	of natural silica, forms of natural glasses, core formed glass vessels, mosaic glass; mold formed vessels, glass blowing, free blown vessels, mold blown objects, cage cups etc.	Deterioration of glass, chemical deterioration, superficial disfigurement, physical damage, cleaning of glass, preliminary assembly, final assembly using medical tape, application of omega clips, application of resin, removal of the omega clips, cleaning of extra resin and adhesive, mold making (using dental silicon and rubber) application of the gap filling resin, refining the additions.
		Lecture. Materials used for cleaning, stabilization and conservation of ancient glass. <i>Choosing</i> <i>consolidants and adhesives for archaeological</i> <i>glass; different resin types, solubility, ageing</i> <i>properties, reversibility, working properties.</i>
Day 18	Workshop: Conservation and restoration of Roman and Late Roman Glass Objects.	Workshop: Conservation and restoration of Roman and Late Roman Glass Objects.
	Mechanical and chemical cleaning of selected original glass shards.	Initial documentation of the condition of glass replicas fragments. Assembly of fragments of Roman or Late Roman object with medical tape
Day 19	Workshop: Conservation and restoration of Roman and Late Roman Glass Objects.	Preparation of PowerPoint presentation of the workshop's results.
	Final assembly, application of omega clips.	Presentation of the Workshop Results and Evaluations
		Farewell dinner and party
Day 20	Departure	

The course structure may be subject to change at the director 's discretion.

TYPICAL WORKDAY

7:00 - 8:00	- Breakfast
8:30 - 13:00 / 13:30	- Workshop for Conservation and Restoration of Ancient Pottery/Glass
13:30 - 15:30 / 17:00	- Lunch and siesta
15:30/17:00 - 19:00/19:30	- Lectures and workshops
19:30/20:00 - 21:00	- Dinner

REQUIRED READINGS

PDF files of all mandatory readings will be provided to enrolled students via a shared Dropbox folder.

Cherneva, D. Archaeological glass from a mound in Pamuklia (Bulgaria), 1st -2nd century AD: Identification, damage phenomena and conservation, Poster, 17th Triennial Conference ICOM-CC, 2014 Melbourne, Australia.

Davison S. - Conservation and Restoration of Glass (Oxford, 2006); 1-242.

Elder, A., S. Madsen, G., Brown, C., Herbel, C., Collins, S., Whelan, C., Wenz, S., Alderson and L. Kronthal. 1997. *Adhesives and Consolidants in Geological and Paleontological Conservation: A Wall Chart*. SPNHC Leaflets, Vol. 1 No. 2. <u>http://www.spnhc.org/media/assets/leaflet2_chart.pdf</u>

Koob S. P. - Conservation and Care of Glass Objects (London, 2006).

Ceramics. - In Proceedings of the University of Chemical Technology and Metallurgy, Sofia, 2011.

Sease, C. 1992. A conservation manual for the field archaeologist. Los Angeles: Cotsen Institute of Archaeology (book available as a free PDF):

http://www.ioa.ucla.edu/publications/pdfs/Conservation%20Manual.pdf

RECOMMENDED READINGS AND WEB SITES

Anderson - Stojanovic, V. R. - Stobi. The Hellenistic and Roman Pottery (Princeton University Press, 1992).

Bray, Ch. - Dictionary of Glass, Materials and Techniques (Pennsylvania Press, 2001).

Buys, S., V. Oakley. The Conservation and Restoration of Ceramics, Oxford, 1993; 3-163.

Clark, A. J., M. Elston, M. L. Hart - Understanding Greek Vases. A Guide to Terms, Styles and Techniques (Los Angeles, 2002).

Davidson, A., S. Alderson and M. Fox. 2006. *Assembling and Archival Marking Kit for Paleontological Specimens*. Poster presented at the 66th Annual Society of Vertebrate Paleontology Meeting, Oct 2006, Ottawa, Canada.

https://www.academia.edu/1385048/Assembling_an_Archival_Marking_Kit_for_Paleontological_Specim ens

Hayes, J. W. - Handbook of Mediterranean Roman Pottery (British Museum Press, 1997).

Mano-Zissi D., J. Wiseman (Hrsg) - Studies in the Antiquities of Stobi (=Proucavanja starina u Stobima), Beograd 1, 1973; 2, 1975; 3, 1981.

Peacock, D. P. S. - Pottery in the Roman World (Longman Group United Kingdom, London, 1982).

Pedeli C., Pulga St. Conservation Practices on Archaeological Excavations. Principeles and Methods. The Getty Conservation Institute, Los Angeles., 2013.

Pilosi, L. (Ed.). Glass and Ceramics Conservation 2007, Interim Meeting of the ICOM-CC working Group, August 2007, Nova Gorica, Slovenia, Edited by GoriŠki Museum, 2007.

Roemich, H., K. van Lookeren Campagne, S. Uitgevers. Recent Advances in Glass, Stained-Glass, and Ceramics Conservation 2013, Proceedings from the ICOM-CC Glass and Ceramics Working Group Meeting and Forum of the International Scientific Committee for the Conservation of Stained Glass (Corpus Vitrearium – ICOMOS

Society for Historical Archaeology. 2006. *Conservation FAQ's* <u>http://www.sha.org/index.php/view/page/conservation_facts</u>

Shurbanovska M. at al. - Archaeological Excavations – Stobi 2001, Macedonia Acta Archaeologica 18, (Skopje 2008)

Sullivan, B. and D. Cumberland, Jr. 1997. Use of Acryloid B-72 Lacquer for Labeling Museum Objects. *Conserv-O-Gram*. Number 1/4. <u>http://www.cr.nps.gov/museum/publications/conserveogram/01-04.pdf</u>

Tennant, N. The Conservation of Glass and Ceramics: Research, Practice and Training (heritage List), 1999.

Wiseman, J. R., D. Mano-Zissi - Stobi: A City of Ancient Macedonia, Journal of Field Archaeology, 3, 1976, 269-302.

WEB SITES

- Centre de Conservation Québec 2010 Cardboard in Preventive Conservation. *Preserv'Art*. <u>http://preservart.ccq.gouv.qc.ca/documents/carton_en.pdf</u>
- Centre de Conservation Québec 2010 Papers in Preventive Conservation. *Preserv'Art*. <u>http://preservart.ccq.gouv.qc.ca/documents/papier_en.pdf</u>
- Kilby, Virginia 1995 Buffered and Unbuffered Storage Materials. *Conserv 0 Gram* 4/9. National Park Service, Washington, D.C. <u>http://www.nps.gov/museum/publications/conserveogram/04-09.pdf</u>
- National Park Service. 2001 NPS Museum Handbook there are general sections that discuss packing and shipping and then there are appendices on specific materials. Each section is available as a PDF that can be downloaded https://www.nps.gov/museum/publications/MHI/mushbkl.html

PART II: TRAVEL, SAFETY & LOGISTICS

NOTICE OF INHERENT RISK

Traveling and conducting field research can involve risk. The IFR engages in intensive review of each field school location and programming prior to approval. Once a program is accepted, the IFR reviews each program annually to make sure it still complies with all our standards and policies, including those pertaining to student safety. Participants should also take every reasonable step to reduce risk while on IFR programs, including following the safety advice and guidelines of your program director, being alert to your surroundings and conditions, letting someone know where you will be at all times, and assessing your personal security.

The IFR does not provide trip or travel cancellation insurance. We strongly encourage participants to consider purchasing this insurance, as unexpected events may prevent your participation or cause the program to be canceled. Insurance is a relatively small cost to protect your educational investment in an IFR program. When comparing trip cancellation insurance policies, make sure the policy covers the cost of both airfare and tuition.

We do our best to follow a schedule of activities, methods training, and programming as outlined in this syllabus. However, this schedule can be easily disrupted by unforeseen circumstances, including weather, revisions by local permitting agencies, or conditions onsite. While this schedule represents the intentions of the program, adaptability is an intrinsic part of all field research, and necessary alterations to the schedule may happen at any time.

If you have any medical concerns, please consult with your doctor. For all other concerns, please consult with the program director and staff.

PROGRAM SPECIFIC FIELD CONDITIONS

You should be aware that conditions on the Balkans are different from those you experience in your home, dorms or college town. Note that South European (subtropical) climate dominates in the region, making summers hot (30-40°C). Rainy and chilly days in this season are rare but not unheard of.

VISA REQUIREMENTS

Citizens of EU, EEA, USA, Canada, Japan, Republic of Korea, Australia and New Zealand **do not need a visa** to visit R. of N. Macedonia for up to 90 days.

Citizens of all other countries may need a visa. The Balkan Heritage Foundation can send an official invitation letter that should be used at the relevant embassy to secure a visa to the program.

For more information about border crossing visit the Balkan Heritage Field School web site at http://www.bhfieldschool.org/countries/macedonia and http://www.bhfieldschool.org/countries/macedonia and http://www.bhfieldschool.org/countries/macedonia and http://www.bhfieldschool.org/countries/bulgaria and http://www.bhfieldschool.org/countries/bulgaria and http://www.bhfieldschool.org/information/visa-help and <a href="http://www.bhfieldschool.org/information/visa-

STUDENT HEALTH

An IFR field school is designed to provide safe, positive, and constructive experiences for participating communities, students, and researchers. We are committed to protocols and practices that support the health and well-being of all involved in our field school projects, including the members of the community in which these projects take place.

We recommend that students adopt best-practices for arriving in a good state of health to protect themselves and their peers' readiness to set about the work of the field school. A thriving field camp environment is a constant exchange of energy, patience, effort, respect, and service. Arriving healthy is every student's first act of service — their first opportunity to behave in a way that respects the safety and wellness of one another.

IFR programs follow the health requirements and guidelines of local health authorities. You may also wish to consult recommendations from the US Centers for Disease Control at: https://wwwnc.cdc.gov/travel/destinations/list

Safety and health orientation will take place at the beginning of the program. Cities around Stobi offer good medical facilities, first aid, and pharmacies. Proper personal hygiene and resting after a hard day of field work are good prevention methods against the summer flu.

TRAVEL (TO AND DURING THE PROGRAM)

Natural disasters, political changes, weather conditions and various other factors may force the cancellation or alteration of a field school. IFR recommends students only purchase airline tickets that are fully refundable and consider travel insurance in case a program or travel plans must change for any reason.General information for this program is below, but keep in mind we will discuss any updated travel information and regulations during the required program orientation, which could affect travel plans.

Further travel details will be provided during program orientation.

If you missed your connection or your flight is delayed, please call, text or email the field school director immediately. A local emergency mobile phone number will be provided to all enrolled students.

ACCOMMODATIONS

Participants stay at the recently renovated, air-conditioned cabins at the archaeological base camp next to the ancient site of Stobi. Students will be housed in rooms with 2–3 beds each. Each cabin has 4 bedrooms, a living room, and 2 bathrooms with showers. A washing machine and Wi-Fi are available for free. The Stobi cleaning staff will clean and disinfect the rooms & bathrooms and common spaces every day. In the beginning of the field school students will be introduced to the safety protocol for the hotel, the shuttle and the site upon arrival.

The closest village to Stobi is Gradsko (5 km), where there are grocery stores, a pharmacy, an ATM, and medical facilities. The closest big supermarket, drugstores, pharmacies, banks with ATM and hospitals are in the city of Negotino (13 km from Stobi).

Meals: Three meals (fresh, homemade food) per day are covered by the program fee. Meals usually take place at the field house premises, except for lunch packages during excursions. This field school can accommodate vegetarians, vegans and individuals with lactose-intolerance diets. Kosher and gluten-free diets are not possible to accommodate at this location.

EQUIPMENT LIST

- Work clothes
- A set of walking and hiking shoes.
- Clothing suitable for outdoor activities (consider weather conditions from hot and sunny to rainy and chilly).
- Wide brim hat for the study trips.
- Medication It is not necessary to bring over-the-counter medicine from your country since you can buy all common types in the R. of N. Macedonia e.g., aspirin, anti-insecticides, sunscreen, etc.) It is recommended that you bring your individual prescription medicines, if any.
- Don't forget to bring a converter to an EU type electricity wall-plug if needed.
- It is recommended that participants bring PCs having at least 5 GB free disk space and a mouse. Operating system recommended: Windows.
- A good attitude for work, fun, study and discoveries.

PRACTICAL INFORMATION

Macedonian dialing code: +389

Time Difference in **the R. of N. Macedonia** (Summertime): UTC/GMT +1 hours (April through September)

Measure units: degree Celsius (ºC), meter (m.), gram (gr.), liter (l)

Money/Banks/Credit Cards: The N. Macedonian currency is the Macedonian DENAR (MKD). N. Macedonian banks accept all credit cards and travelers' checks. Usually, banks are open from 8.00 a.m. to 6 p.m. from Monday to Friday and from 8.00 a.m. to noon on Saturday. You can see N.Macedonian notes and coins in circulation at: www.nbrm.mk/?itemID=C2B15406ABC3BC46B2525F66092FB01D

In both countries, you cannot pay in Euros or other foreign currency except in casinos and big hotels (where the exchange rate is really unfair)!

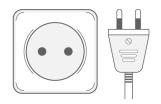
The exchange of foreign currencies is practiced not only by banks but also by numerous exchange offices. **NB!** Most of them don't collect commission fees and have acceptable exchange rates (+/- 0.5-1,5% of the official rate). However, those located in shopping areas of big cities, resorts, railway stations, airports etc. can overcharge you variable amounts. Ask in advance how much money you will get!

ATMs are available all over both countries, and POS-terminals are in most bank offices.

If you plan to use your credit/debit card, please inform your bank of your intention before departure! Otherwise, it is very possible that your bank will block your account/ card for security reasons when you try to use it abroad! Unblocking your card when abroad may cost you lots of phone calls and money.

ELECTRICITY¹ The electricity power in both countries is stable at 220 - Volts A.C. (50 Hertz). Don't forget to bring a voltage converter if necessary!

Outlets generally accept 1 type of plug: Two round pins. If your appliances plug has a different shape, you may need a plug adapter.



Emergency in R. of N. Macedonia

National emergency number is **112** Police: **192** Fire brigade: **193**