



UNDERWATER ARCHAEOLOGY AT NESSEBAR, ANCIENT MESAMBRIA (BLACK SEA), BULGARIA

Course ID: ARCH 365AL

May 21 - June 18, 2022

Academic Credits: 8 Semester Credit Units (Equivalent to 12 Quarter Units)

School of Record: Connecticut College

FIELD SCHOOL DIRECTOR:

Dr. Nayden Prahov, archaeologist at the National Institute of Archaeology with Museum, Bulgarian Academy of Sciences; Balkan Heritage Foundation Program Director (naydenprahov@gmail.com)



This program requires students to have Open Water Diver Certification, DAN diving insurance & complete Medical Approval Form prior to the beginning of the field school. Tuition covers accommodations, general health insurance, instruction, 8 semester credit units & breakfast on workdays. Students are responsible for all other meals.

OVERVIEW

This field school provides experience and training in underwater archaeology through participation in an ongoing research project – investigating the submerged heritage of ancient Messambria – present day Nessebar – on the Bulgarian Black Sea Coast. Training will include various underwater archaeology and interdisciplinary practices such as underwater reconnaissance surveys and archaeological excavations, underwater photography, photogrammetry and 3D modeling, mapping and recording of submerged archaeological structures and monuments, marine geophysical survey, reflectance transformation imaging (RTI) of graffiti of ships in Medieval churches, etc. Our research aims to fill the gaps in scientific knowledge of coastal landscape changes and the Black Sea level fluctuation in Antiquity and the Medieval Age, as well as the human reaction and adaptation to such changes. This field school is suitable for beginners in the field and aims to broaden knowledge, refine skills and thus propel students to further their career in Maritime and Underwater Archaeology.

A key component of the project is raising public awareness of the local archaeological heritage in order to facilitate and gain support for its protection, study and presentation. This component will be achieved through developing a project for the establishment of an underwater museum of archaeology (diving sightseeing tour) and showcasing the submerged heritage and landscapes. Students will help with the development of such program think-tank actions, individual idea proposals (student assignments), communication with local people, diving centers, tourists and local archaeologists.

Nessebar and its Cultural Heritage

Founded at the end of the Bronze Age by a Thracian tribe, Nessebar is one of the oldest towns on the western Black Sea Coast. Its name, which was originally Mesambria, originates from the Thracian words “Melsas”, the name of the legendary founder of the settlement and “bria”- the Thracian word for town. It is situated on a small peninsula (about 0.5² km) that was connected to the mainland by a narrow isthmus. According to ancient sources, Nessebar had two harbors – one on its north and another to its south. Messambria’s first Greek colonizers were of Dorian origin who settled there at the end of the 6th century BCE. The town grew quickly and became one of the most powerful Greek colonies along the western Black Sea Coast. It had several temples, a gymnasium, a theater, massive administrative buildings and corresponding infrastructure. Messambria was also gradually surrounded by massive fortification walls. It reached the peak of its prosperity in the 3rd – 2nd centuries BCE, at which point it even minted its own gold coins. Commercial links connected it to towns from the Black Sea, Aegean, and Mediterranean coasts. Numerous imported precious artifacts now displayed in the Archaeological Museum of Nessebar provide material expression of the site’s rich economic, cultural, and spiritual life in this period.

In 72 BCE, the town was conquered by Roman armies without resistance. After a temporary occupation in the beginning of the 1st century CE, it was included permanently within the limits of the Roman Empire. After the capital was moved to Constantinople in 324 and Christianity was accepted as the official religion of the Empire in 313, favorable conditions arose for the renaissance of the town. New Christian basilicas, fortification walls, and water supply lines were built in the following centuries.

The city was besieged and taken for the first time by the Bulgarians in 812 CE. It was in a border region between the Byzantine Empire and the Bulgarian Kingdom and periodically changed hands between the two powers. During the 12th and 13th centuries, active trade links were developed between Nessebar and some Mediterranean and Adriatic towns, such as Constantinople, Venice, Genoa, Pisa, Ancona, and Dubrovnik, as well as with the kingdoms north of the Danube region. During almost its entire Christian history, Nessebar was the seat of a bishop. Many churches and monasteries were built in the city and its surroundings reflecting its prosperity and richness.

Nessebar fell under Ottoman rule together with the Byzantine capital Constantinople in 1453 CE. During the following centuries, the economic and spiritual life did not stop and Nessebar’s harbor continued to be an important import and export center. The shipyard’s production, one of the main subsistence of the town, served the Ottoman fleet and the local merchants. In 1878 Nessebar was liberated from the Ottomans and included into the borders of Bulgaria.

Due to its unique natural position, rich cultural heritage, and the large number of well-preserved monuments (esp. churches from the 13th – 14th centuries), modern-day Nessebar is an archaeological and architectural reserve. In 1983 the Old Quarter of Nessebar was included in UNESCO’s list of World Heritage Sites.

Underwater heritage of the town

Underwater studies in the region of Nessebar began in 1960 as a continuation of studies on land. Fifteen underwater archaeological campaigns were conducted in total (until 1983). During these studies, it was found that significant parts of the ancient town today are below sea level. Ruins of fortification walls, towers (including a hexagonal one), staircases, gates and other structures from the pre-Roman era, Late Antiquity and the Middle Ages, were traced in various sectors around the peninsula – northwest, north, northeast, and east. The tracked layout of the fortification walls of Mesambria leads us to conclude that due to sea transgression, landslide activity, sea abrasion and a series of earthquakes, Nessebar has lost a significant intramural part of its territory. Today it lays underwater at a depth between 1.5 and 6 meters.

Research and Heritage Preservation Objectives

- To reconstruct the evolution of the coastline of the peninsula.
- To search for, localize, identify, map and record the submerged structures around Nessebar and to clarify the defense systems of the town in Antiquity and Middle Ages.
- To date the different structures and to document the stages of relative sea level fluctuations, coastal changes and human adaptation through building new fortification systems.
- To search and identify the ancient harbors of the town.
- To study and record Medieval graffiti of ships in Nessebar's churches.

ACADEMIC CREDIT UNITS & TRANSCRIPTS

Credit Units: Attending students will be awarded 8 semester credit units (equivalent to 12 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 360 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 National Student Clearinghouse: <http://bit.ly/2hvurkl>.

REQUIREMENTS AND PREREQUISITES

- Open Water Diving Certificate (any worldwide recognized training organization)
- Proof of DAN diving insurance policy
- Complete Medical Approval & Physician Approval Form
- At least four dives within the year before the field school (logbook). Students may choose, at their own expense, to participate in four dives in Bulgaria before the field school begins with our diving partner.
- This field school will host students and professionals from across the world. With such an international team, it is vital that all students respect the IFR Student Code of conduct, each other's cultures, local cultures, and local rules and laws.

INSURANCE

The Institute for Field Research (IFR) will purchase general health insurance for all attending students. This insurance does not cover diving activities and students need to purchase a DAN diving policy insurance and present proof of coverage to the IFR. Policies may be purchased from the Divers Alert Network (diversalertnetwork.org/insurance) or DAN Europe (daneurope.org/insurance).

DISCLAIMER – PLEASE READ CAREFULLY

Our primary concern is with education. Traveling and conducting field research involve risk. Students interested in participating in IFR programs must weigh whether the potential risk is worth the value of education provided. While risk is inherent in everything we do, we do not take

risk lightly. 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.

The IFR does not provide trip or travel cancellation insurance. We encourage students to explore such insurance on their own as it may be purchased at affordable prices. insuremytrip.com or Travelguard.com are possible sites where field school participants may explore travel cancellation insurance quotes and policies. If you do purchase such insurance, 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 any number of unforeseen circumstances, including revised decisions by local permitting agencies, political unrest, and changes in the weather. While this schedule represents the best of the director(s) intentions, we—students and staff alike—need to be adaptable and tolerant of necessary alterations. This adaptability is an intrinsic part of all field research.

This field school includes physical work underwater at archaeological sites. To avoid health problems and injuries, a strict discipline will be maintained, especially on diving days. Students will have to adhere to a regime of structured diving schedule, diet restrictions and rest periods. Although the depth of diving will be fairly shallow – 3-8 meters—dive masters and program staff will monitor diving times and intervals and students will not be able to dive without strict supervision and report to directors.

Students are required to immediately report any health problems, physical discomfort or any other issues that may impact diving schedules. Project directors hold the full discretion to prevent students from diving if they deem that a student's health and/or safety may be threatened by (continued) diving.

Be aware that in June days are hot (25-35°C) and nights are chilly (15-25°C). Although rare in this region and season, rainy days are a possibility. The Black Sea is usually calm at this time of the year, but diving will be halted during windy days, when waves are high, currents too strong or water too muddy. Diving decisions will be made and are at the sole discretion of the project directors.

Proper protection from the elements, both during dives and on terrestrial settings, will be required and enforced by project staff members.

Many Bulgarians speak English, but cultural differences should be expected. Although many signs include Latin characters, expect street signs and most public signs to primarily use Cyrillic alphabet.

If you have any medical concerns, please consult your doctor. For all other concerns, please consult the project director / program staff, as appropriate.

COURSE OBJECTIVES

1. Introduce students to basic underwater excavation methods and practices, including preparation and work with ejectors, trowels, identify artifacts, features and structures.
2. Develop capabilities to perform underwater documentation tasks using measuring and documentation devices, creating written, graphic, photographic, photogrammetric records.
3. Teach students how to recognize and evaluate stratigraphic relationships and contextual information, generate and test site formation hypotheses.
4. Introduce students to basic finds processing methods – initial desalination, cleaning, sorting, labeling, drawing, photographing and description.

5. Introduce students to advanced underwater documentation techniques – photogrammetry and 3D modeling of underwater structures.
6. Introduce students to the basic principles of artifact conservation from salty water environments.
7. Introduce students to geophysical prospection techniques – scanning with multibeam echosounder, side scan sonar, sub-bottom profiler as well as data processing and results interpretation.
8. Introduce students to remote sensing prospection and documentation techniques using ROV, bathymetric aerial LIDAR and aerial photography (theoretical), etc.
9. Introduce students to Reflection Transformation Imaging (RTI) technique for documentation of epigraphic monuments.
10. Train students in developing diving skills in a manner that allows scientific research – establish and maintain neutral buoyancy, work upside down, avoid contaminating the water and use proper communication signs.
11. Present Bulgarian underwater archaeology to students, in the context of world maritime archaeology (history, sites, main research topics, concerned institutions, legislation, etc.).

LEARNING OUTCOMES

Students participating in this field school will gain basic knowledge and experience in various underwater archaeology and interdisciplinary practices: underwater reconnaissance survey, archaeological excavations, underwater photography, photogrammetry and 3D modeling, mapping and recording of submerged archaeological structures and monuments and marine geophysical survey leaving them better prepared for any future underwater archaeological fieldwork projects. They will have certain knowledge in the history and archaeology of Nessebar and the Black Sea coast, as well as basic training in RTI. 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
30 %	Exam (test)
10 %	Excavation work
10 %	Keeping a field journal and filling in documentation sheet
10 %	Student assignments (paper) about establishing an underwater archaeological tour or museum of Nessebar's cultural heritage
10 %	Photography & Photogrammetry
10 %	Underwater field survey
10 %	Diving skills
10 %	Participation in RTI modeling workshop

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 medical or other personal reasons 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.

TRAVEL, ROOM & BOARD, & SAFETY LOGISTICS

COVID Disclaimer. The logistics outlined below for this IFR field school were written according to the most current and accurate information available to IFR. We recognize that the best practices for preventing the transmission of the coronavirus may change in the coming months. The IFR will be revisiting program-specific plans periodically throughout the enrollment period and will update program details according to new developments, new travel protocols, and updates to local policies.

An IFR field school is designed to provide positive, constructive experiences for communities, students, and researchers. Amid the COVID-19 pandemic, the following protocols have been developed based on the assumption that any participant in an IFR field school may be an asymptomatic carrier of SARS COVID-19 and any of its variants. Our goal, with these protocols, is to reduce the possibility for COVID-19 transmission among participants, staff, and local community members. IFR depends on the complete and sustained commitment of all students to stay healthy and to help others stay healthy. On enrollment, students commit to comply with all aspects of the IFR COVID-19 avoidance policy as well as any/all policies specific to their respective IFR field school.

PRIOR TO TRAVEL

We ask that all students participating in IFR programs be **fully vaccinated** prior to travel. Furthermore, all eligible vaccinated students are **required to have received a vaccination booster**.

Students must arrange a test for current infection for COVID-19 through a RT-PCR test for themselves in their home location within 72 hours prior to the start of the program and upload proof of a negative result to their IFR application portal.

After demonstrating they tested negative, students must take all precautions possible to ensure they remain COVID-19 free prior to and during travel to the field school. Students should plan to travel in the safest manner that they are able (e.g., avoid flights with long layovers and multiple connections). In addition, we require the following from all students: use of a face mask during travel to, from, and on airlines, ferries, trains, buses, and the like; regular washing of hands; and, in so far as possible, maintain social distancing of 6 feet / 2 meters in airports and other spaces.

On arrival at the Sofia International Airport, students will need to take a PCR test at the airport labs and then self-quarantine at a recommended airport hotel overnight. Students are responsible for these costs—the PCR test and the hotel room— and should make a room reservation prior to travel. Please see below for more information.

VISA REQUIREMENTS

Citizens of EU, EEA, USA, Canada, Japan, Republic of Korea, Australia and New Zealand do not need a visa to visit Bulgaria 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 visit the Balkan Heritage Foundation web site at <http://www.bhfieldschool.org/information/visa-help> and the links provided there.

Citizens of other countries are asked to check the embassy website page at their home country for specific visa requirements.

TRAVEL (TO AND DURING THE PROGRAM)

Due to ongoing uncertainties regarding the travel regulations related to COVID-19, IFR will assess the local conditions closer to the travel date (about 4 weeks prior to the program beginning) and will make Go/No Go decisions then. We urge you to participate in the mandatory orientation meeting when we will discuss the latest travel information and regulations. We also suggest you consider postponing the purchase of your airline ticket until after the program orientation.

Please frequently consult the website of the US Embassy in Bulgaria for the most up-to-date travel restrictions/protocols <https://bg.usembassy.gov/covid-19-information/>

If a student is held at the border for health reasons, they should contact the program director or appointed staff member for their field school at the numbers provided in their orientation materials. On arrival at Sofia International Airport, students will need to take a PCR test at the airport labs (approx. cost 48-56 USD) and then self-quarantine at a recommended airport hotel overnight. The BHF recommends the [Best Western Premier Sofia Airport Hotel](#)** for the one night quarantine after arrival. Students are responsible for these costs—the PCR test, the hotel room (they should make a room reservation prior to travel) and the shuttle cost (45 EUR) to the project venue. All students with negative PCR test results will be picked up from the hotel by a shuttle and delivered to the project hotel - [Emona Guest house](#) in downtown Old Nessebar the next day.

The wearing of face masks during travel is mandatory. Students are able to get general information, essential travel basics and tips concerning the project location and the country at [http://www.bhfieldschool.org/countries/bulgaria\(forBulgaria\)and](http://www.bhfieldschool.org/countries/bulgaria(forBulgaria)and) <https://www.bhfieldschool.org/program/underwater-archaeology-in-the-black-sea> (*for the project / see the map on the bottom of project web site*). All students will receive a travel info-sheet with specific travel details prior to departure.

All students with negative PCR test results will be picked up from the hotel by a shuttle to Emona Guest House in Nessebar.

If you missed your connection or your flight is delayed, please call, text or email the field school director / project staff immediately (email: bhfs.admissions@gmail.com). A local emergency mobile phone number will be provided to all enrolled students.

While the COVID pandemic persists, any leisure travel during the program and entailing use of buses, trains, and/or airplanes must be approved by the program director(s) prior to booking and departure.

LOCAL PROTOCOLS, REGULATIONS, & EXPECTATIONS

Current Bulgarian entry requirements as per Health order of the Bulgarian Ministry of Health ([Order RD-01-49/28.01.2022](#)) are in effect from February 01, 2022, through March 31, 2022. These requirements may change in the following months according to the COVID-19 situation in the country. For most up to date information please check the websites of the [Bulgarian Ministry of Health](#) and the [US Embassy in Bulgaria](#).

The program will not include activities that promote extra-contact with people outside of the team and project hotel. Interaction with the local community must be limited to situations where everyone can maintain the required 6-foot/2-meter physical distance, wear masks, and ideally be outside.

In case of a COVID-19 outbreak, [Emona Guest house](#) has all the facilities to guarantee complete isolation. Interaction with the local community must be limited to situations where everyone is masked when indoors and/or can ideally be outside.

HEALTH AND SAFETY

- Safety and health orientation will take place at the beginning of the program.
- Underwater Fieldwork will be supervised by dive masters.
- Students will always be supervised and accompanied by field school instructors and/or dive masters underwater.
- Nessebar is a major Bulgarian summer resort location and offers medical facilities, first aid, and numerous pharmacies. The nearest decompression chamber is in the city of Burgas (35 km).
- Underwater Fieldwork will be performed at 3 – 8 meters depth. The diving time underwater as well as the diving requirements will be strictly adhered to in order to avoid any risk of decompression sickness.

FACE MASKS / FACE COVERINGS

All students, faculty and staff are expected to wear face masks when in indoor spaces shared with others. Wearing face masks, combined with vaccination, are among the most effective ways of minimizing the spread of the coronavirus.

The objective of wearing a mask is to capture potentially infectious droplets from the wearer. Therefore:

- Masks or respirators that are equipped with an "exhalation valve" are not permitted, unless covered by another mask.
- Neck fleeces (gaiter masks) are considered the least effective form of face masks and are not permitted. (The material found in gaiters tends to break down large droplets into smaller particles that are more easily carried away in the air.)
- Folded bandanas and knitted masks are ineffective and are not permitted.
- Masks must be worn so as to cover both the mouth and nose. If your mask becomes loose, it can be tightened by twisting the ear loops.

ACCOMMODATIONS

Students will stay at the family hotel [Emona Guest house](#) in the Old Town Quarter of Nessebar in rooms with two to three beds (bathrooms with shower and WC, TV, air-conditioning). Cheap laundry service and free Wi-Fi is available. Participants are not expected to bring any additional equipment, bedclothes or towels. Single rooms are available upon request for the supplement of 120 EUR per week. Staying an extra day at the hotel costs 25 EUR (per night per person). The distance from the hotel to the site and the beach is approx. 200 m and it takes approx. 2 min to walk. Diving gear will be transported by a car.

Meals. Breakfasts on workdays as well as the welcome and the farewell dinners are covered by the tuition fee. Students are responsible for their daily lunch and dinners and all meals on days off.

Nessebar offers a variety of restaurants that can meet everyone's preferences and dietary requirements – from fast food options to cozy gourmet restaurants. The average meal price (soup/salad, main dish and dessert) can cost between 6 to 15 USD. The project team will recommend restaurants for different preferences (cuisine, cost, dietary needs) and will arrange discounts for the students.

All participants in a field school, students and staff, will wear masks while indoors (i.e., during lectures, during labs, in shared residential spaces, etc.).

Regular hand washing will be a part of the project's daily schedule.

MANAGING COVID-19 CASES & OUTBREAKS

In the case of COVID -19 with mild symptoms the student will be quarantined for 10 days in a single room accommodation with an additional payment of 120 Euro per week. He/she will receive food in the room. Their laundry will be processed separately. If this occurs near the end of the field school, the student/s will have to cover the full hotel expenses for the quarantine for the period after the end of the field school.

COURSE SCHEDULE

This Field School has four modules:

MODULE I – Methods and theory. Consists of following components (25 hours):

1. Lectures and instructions concerning underwater archaeological methods and practices for excavation and documentation, marine geophysics, artifact processing and documentation
2. Lectures about sea level fluctuations, evolution of coastal landscapes, coastal geomorphology in the context of the Black Sea Coast and archaeology.
3. Lectures about the history and archaeology of Nessebar, the Western Black Sea Coast, Bulgaria and the Balkans.

MODULE II – Practicum (145 hours; min. 14 dives). Consists of two components:

1. Fieldwork: Basic practices of underwater archaeological survey, excavation and documentation. Marine geophysical survey (Optional, depending on sea conditions). Reflectance Transformation Imaging (RTI) documentation of graffiti of ships in Medieval churches.
2. Workshops: Processing of data and information: creating 3D photogrammetry models, photomosaics, RTI models; Finds processing and documentation (drawing, photographing, desalination).

MODULE III - Excursions accompanied by lectures, presentations and behind-the-scenes visits to sites of historical/archaeological significance (app. 20 hours):

1. Sozopol – ancient Apollonia Pontica
2. Nessebar – ancient Mesambria
3. Museum of the Anchor in Ahtopol
4. Exposition “Secrets from Underwater” in Kiten
5. Varna, ancient Odessos

MODULE IV – Student assignments (app. 20 hours) will include work on:

1. Field journal
2. Context sheets
3. Feature drawings
4. Photogrammetry data processing
5. RTI data processing.
6. Writing a proposal for establishment of Museum of Underwater Archaeology / Diving sightseeing tour in Nessebar

All IFR field school begins with safety orientation. This orientation includes proper behavior at the field area, proper clothing, local cultural sensitivities and sensibilities, potential fauna and flora hazards, review IFR harassment and discrimination policies and review of the student Code of Conduct.

Date	Morning	Afternoon
Day 1 May 21	Arrive by noon at Sofia Airport in Sofia, Bulgaria, conduct a COVID-19 PCR* test on arrival at the airport and get self-quarantined for the period before the pick-up, at the Best Western Premier Sofia Airport Hotel ** (these rules may be changed. The BHFS will provide ongoing updates on COVID-19 rules and restrictions in Bulgaria to all enrolled students).	
Day 2	All students with negative PCR test results will be picked up from the hotel by a shuttle to Emona Guest House in Nessebar.	- Nessebar sightseeing tour and visit to Museum of Archaeology in Nessebar - Traditional Bulgarian welcome dinner.
Day 3	Orientation panel -Visit to the diving center and preparing of personal diving equipment Safety instructions.	- Presentation of the Balkan Heritage Field School and collaborative universities & institutions, the project and the participants. Icebreakers. - Lecture: History and Archaeology of Nessebar - Lecture: Underwater Cultural Heritage of Nessebar
Day 4	Practicing basic underwater diving techniques; Underwater field survey	- Lecture: Overview of the Bulgarian Underwater Archaeology – Part 1
Day 5	Fieldwork.	- Lecture: Overview of the Bulgarian Underwater Archaeology – Part 2
Day 6	Fieldwork.	- Lecture: Challenges before the underwater cultural heritage
Day 7	Excursion to Varna, ancient Odessos.	
Day 8	Day off	
Day 9	Fieldwork.	-Workshop: Underwater photography and photogrammetry
Day 10	Fieldwork.	Lecture: Underwater photogrammetry
Day 11	Fieldwork.	Workshop: Underwater photogrammetry
Day 12	Fieldwork.	Workshop: Underwater photogrammetry
Day 13	Fieldwork.	Workshop: Underwater photogrammetry
Day 14	Visit to Museum of Underwater Archaeology in Kiten and Museum of the Anchor in Ahtopol	

Day 15	Day off	
Day 16	Fieldwork.	- Workshop: Reflectance Transformation Imaging
Day 17	Fieldwork.	- Workshop: Reflectance Transformation Imaging
Day 18	Fieldwork.	- Workshop: Reflectance Transformation Imaging
Day 19	Fieldwork.	- Workshop: Reflectance Transformation Imaging
Day 20	Fieldwork.	- Lecture: Marine Geophysics
Day 21	Fieldwork. Marine Geophysics	Visit to Sozopol, ancient Apollonia Pontica.
Day 22	Day off	
Day 23	Fieldwork.	- Workshop: Drawing of ground plan
Day 24	Fieldwork.	- Workshop: Documentation processing
Day 25	Fieldwork.	- Workshop: Documentation processing
Day 26	Fieldwork.	- Exam / Test Preparing a paper;
Day 27	Fieldwork.	- Evaluation of the field school; Discussion
Day 28	Fieldwork (not diving) / workshop; Taking care of the gear;	- Free afternoon - Dinner and farewell party
Day 29	Departure – return home or further travel	

Course structure may be subject of change upon directors' discretion and weather conditions.

TYPICAL WORKDAY

7.30 - 8.00 am	- Breakfast
8:00 am - 1.30 pm	- Fieldwork
1.30 -4.30/5:30 pm	- Lunch and siesta
4.30/5.30 -7.00/7:30 pm	- Lectures and workshops

EQUIPMENT LIST (What to bring)

- Diving gear – Diving weights and tanks will be provided by the field school. Students are responsible for equipment listed below. If you do not wish to bring your own diving gear, you may rent such gear from a local Diving Center at a price of up to 20 Euros per day (depending on items rented).

You will need:

- Wet/dry suite 5mm thickness or more **with a hood (or with separate hood)**
- Dive boots
- Fins
- Mask
- Snorkel
- Regulator

- Buoyancy Controlling Device (BCD)
- Diving knife
- Belt without the weights (weights will be provided by the program)
- Diving gear bag
- Optional: dive computer, writing slate board.
- A set of walking or hiking shoes for the excursions.
- Clothing suitable for outdoor activities (weather conditions from hot & sunny to rainy & chilly).
- Wide brim hat.
- A small backpack (for your food, bottle of water, wet wipes, camera, papers etc.)
- A light raincoat for possible rainy and windy days.
- Medication - It is not necessary to bring over-the-counter medicine since you can buy all common types in Bulgaria (e.g., aspirin, anti-insecticides, sunscreen, etc.) It is recommended, however, that you bring any individual prescription medicines at sufficient quantities for the duration of this program.
- A converter for an EU type electricity wall-plug.
- A good attitude for work, fun, study, and discoveries.

PRACTICAL INFORMATION

Bulgarian dialing code: +359

Time Difference (Summertime): UTC/GMT +2 hours (April through September).

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

Money/Banks/Credit Cards: The Bulgarian currency is the Bulgarian LEV (BGN). You cannot pay in Euros or other foreign currency, except in casinos and big hotels (where the exchange rate is really unfair)! Since 1997, the Bulgarian LEV has been pegged to the EURO at the exchange rate of 1 euro = 1.958 lev (usually sold for 1.94 lev). Bulgarian banks accept all credit cards and sometimes travellers' checks. Usually banks open at 8.00-8.30 am and close at 17.00-18.00 pm. They work from Monday to Friday. Shopping malls, supermarkets, and many shops in Sofia and/or bigger towns and resorts will also accept credit cards. This is not valid for smaller "domestic" shops throughout the country where the only way of payment is cash! You can see Bulgarian notes and coins in circulation at: <http://www.bnb.bg/NotesAndCoins/NACNotesCurrency/index.htm?toLang= EN>

Exchange of foreign currencies is possible not only at banks but also at numerous exchange offices. Note that most of these don't collect a commission fee 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 in varying amounts. Ask in advance how much money you will get!

ATMs are available all over the country and POS-terminals are in every bank office.

If you plan to use your credit/debit card in Bulgaria, please inform your bank of your travel 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, if possible, may cost you several phone calls and a lot of money.

Electricity

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

Outlets in Bulgaria generally accept 1 type of plug:  two round pins. If your appliance's plug has a different shape, you will need a plug adapter.

Emergency

National emergency number is 112.

REQUIRED READINGS

PDF files of the mandatory reading will be posted on a shared Dropbox folder. Enrolled students will get access to this folder.

Bowens, A. Underwater Archaeology: The NAS Guide to Principles and Practice, Second edition, 2009, Portsmouth, Blackwell Publishing, 15-169.

McCarthy, J., J. Benjamin. Multi-image Photogrammetry for Underwater Archaeological Site Recording: An Accessible, Diver-Based Approach. – *Journal of Maritime Archaeology*, 2014, 1, 95-114

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