

Field Methods in Archaeobotany and Paleoclimate Reconstruction

Name of Lecturer: Dr. Dafna Langgut

Academic year: 2020/21 **TAU Credits:** 4 **Level:** Graduate

Class will be held on: February 14th-19th, 2021, in Masada, Israel

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Reading material: Please see below

Course Goals:

To gain field experience in archaeobotany, paleo-environmental and paleo-climate reconstruction and dating methods in archaeology. The course would focus on field sampling strategies and the compliance of each proxy to the relevant archaeological questions as well as to the preservation and environmental conditions.

Course Description:

This unique one-week course (14-19/2/2020) will focus on sampling strategies in order to shed light on archaeological and environmental questions. The course will deal with three disciplines: (i) archaeobotany, (ii) chronology, and (iii) paleo-environment.

The course will take place at three locations: Masada (a world heritage archaeological site at the Judean Desert), the Dead Sea shore and Masada marlstone. The following proxies will be studied: Dead Sea lake level reconstruction (based on lithology and sedimentology), paleo-seismology (identification of paleo-earthquakes), palynology (fossil pollen grains), anthracology (carbonized-wood remains), preservation of wooden implements and other organic materials. During the course we will also study how to sample for ¹⁴C radiocarbon dating, dendrochronology and luminescence dating (OSL). Special focus will be given to the reconstruction of the lavish gardens of Herod the Great at Masada, characterized by harsh desert environment. The course will include a visit to the botanical gardens at Ein Gedi (a desert oasis) and a visit to the Museum of Masada.

Course Requirements and grade:

Full participation in all field activities, including attending to all lectures during the field workshop (40% of the grade). Submission of final seminar paper until the end of February 2021 (40% of the grade).

Tel Aviv University International

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Timetable:

	Sunday 14.2.2020	Monday 15.2.2020	Tuesday 16.2.2020	Wednesday 17.2.2020	Thursday 18.2.2020	Friday 19.2.2020
Morning	Arrival at *TAU	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
	Opening meeting + General introduction	Field day at Masada marlstone	Field day at the Dead Sea shore	Field day at Masada archaeological site	Field day at Masada archaeological site	Course summary (at Masada archaeological site)
	A visit to the Laboratories of Archaeological Sciences at TAU	Topic: Dead Sea Lake levels reconstruction and earthquakes history	Topic: Palynology - vegetation and climate reconstruction (samples for pollen and dating will be collected from a sediment outcrop)	Topic: Collecting botanical remains at an archaeological site (pollen, seeds, charcoals, wooden beams)	Topic: Dating methods – how to sample for ¹⁴ C, **OSL and dendrochronology	Packaging field equipment
Noon	Lunch (at TAU)	Lunch (in the field)	Lunch (at the field)	Lunch (at Masada site)	Lunch (at Masada site)	Lunch (at Masada site)
Afternoon	A bus ride to Masada Hostel	A visit to the botanical gardens at Kibutz Ein Gedi (a desert oasis)	A visit to Masada Museum	Preservation at archaeological sites (a tour at Masada with the site's conservator-restorative)	Participation at the archaeological excavation	Ride back to Tel Aviv
Evening	Dinner (hostel)	Dinner (hostel)	Dinner (hostel)	Dinner (hostel)	Dinner (hostel)	
	Safety and orientation lecture (Dr. Guy Stiebel, Director of Masada Expedition)	Paleoclimate and paleoenvironment of the southern Levant (a lecture by Dr. D. Langgut) One-on-one discussions on the seminar paper	Masada – a world heritage archaeological site (a lecture by Dr. Guy Stiebel) One-on-one discussions on the seminar paper	Paleo-parasitology (a lecture by Dr. Eitan Kremer) One-on-one discussions on the seminar paper	Herod the Great royal gardens come alive (a lecture by Dr. D. Langgut) One-on-one discussions on the seminar paper	

Accommodation: At the Masada hostel.

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