

III CEIMAR International Summer School on Estuarine and Nearshore Systems: From Fundamentals to Cutting-Edge Knowledge



June 5th - June 17th, 2016

To be held in Granada, Spain

Organized by the University of Granada (Spain),
the Utrecht University (The Netherlands) and
the International Campus of Excellence of the Sea (CEIMAR)

<http://gdfa.ugr.es/summerschool16>



Organizing Committee

- Manuel Díez-Minguito, Environmental Fluid Dynamics Group, University of Granada, Spain.
- Miguel Ortega-Sánchez, Environmental Fluid Dynamics Group, University of Granada, Spain.
- Luis Cruz-Pizarro, Instituto del Agua, University of Granada, Spain.

Advisory Committee

- Miguel Á. Losada, Environmental Fluid Dynamics Group, University of Granada, Spain.
- Huib E. de Swart, Institute for Marine and Atmospheric Research Utrecht, Utrecht University, The Netherlands.

Important dates

- Check in: **Sunday, June 5th** (Icebreaker at 20:00).
- Starting date of Summer School: **Monday, June 6th**.
- Check out: **Saturday, June 18th**.

Aims and structure

- The III CEIMAR International Summer School will focus on the process-based modelling of estuarine and nearshore systems, covering from fundamental concepts to advanced applications or current knowledge of these systems. The primary topic of the school will be the study of the estuarine and the nearshore environment with simple mathematical-physical models that govern hydrodynamic, morphodynamic, and ecological processes. The school aims at providing an integral view of actual coastal systems through thematic lectures, and hands-on practices led by international renowned experts. The attendants will conduct and analyze laboratory and field measurements, which will allow for a more complete modelling of the physical processes, and for the strengthening of the integral view of these systems.
- Lectures and practices are organized in four parts: (I) beach and nearshore, (II) estuaries, (III) nearshore and estuarine biochemistry, and (IV) smart data analysis.

Topic	#Hours	Lecturers
Beach and Nearshore (I)	8(4T+4P)	Masselink, Ortega-Sánchez
Estuaries (II)	8(4T+4P)	Schuttelaars, D'Alpaos, Díez-Minguito
Ecological modelling (III)	8(4T+4P)	Ruiz, de Swart
Data analysis of lab and field observations (IV)	8(4T+4P)	Longo, Valle-Levinson

- This Summer School is intended for MSc and PhD students who are interested in/working on physical processes in nearshore and estuarine systems. Our students are expected to be familiar with basic concepts (at least, end level of Sc. or Eng. bachelor) of: hydrodynamic equations, ocean waves, boundary layer properties, mathematical and statistical methods, and computer programming.
- The course consists of 70 hours a two-week period. The course takes the form of 32 hours of lectures and assisted practices, approx. 10 hours of a field trip (FT) to the Granadian coast, and about 28 hours of students' work. Approximate distribution of hours between Theory (T) and Practices (P), to be done by the students assisted by the lecturers, is 50%. The student's working hours also include: short individual presentations (10 min/student) in which they introduce themselves and their research interests; teamwork to carry out practices and assigned projects; and final group presentations of the outcome of the project (30 min/group).

Activity	#Hours
Lectures	32
Field Trip	10
Students' work	28

Students' activities	#Hours
Individual presentations	3
Final group presentations	5
Teamwork and supervisors assistance	20

- The assigned projects will consist of a short research on related to different topics addressed at the school. Each project is expected to be carried out by a group of 3 or 4 students under supervision of experts. These projects will be assigned by organizers and lecturers. At the end of the Summer School, each group will give a 30 min presentation of the outcome of the project.
- The **tentative** schedule is as follows.

Topics	
I	Beach and Nearshore hydro- and morphodynamics
II	Estuaries hydro- and morphodynamics
III	Ecological modelling
IV	Data analysis of lab and field observations
SP	Students presentations
STW	Students team work

Day	Date	Morning (09:00-09:30)	Morning (09:30-10:30)	Morning (10:30-11:30)	Morning (11:30-12:30)	Morning (12:30-13:30)	Afternoon (15:00-16:00)	Afternoon (16:00-17:00)	
1	June 5th, Sunday		Arrival	Arrival	Arrival	Arrival	Arrival	Arrival	Icebreaker at 20:00
2	June 6th, Monday		Reception	Opening	I	I	IV	IV	
3	June 7th, Tuesday	SP	Field Trip						Estimated arrival at 20:00
4	June 8th, Wednesday	SP	I	I	IV	IV	I	I	
5	June 9th, Thursday	SP	II	II	I	I	Visit to the IISTA facilities		
6	June 10th, Friday	SP	III	III	II	II	SP	SP	
7	June 11th, Saturday	SP	II	II	III	II	STW	STW	
8	June 12th, Sunday		Free	Free	Free	Free	Free	Free	
9	June 13th, Monday	STW	III	III	II	III	STW	STW	
10	June 14th, Tuesday	STW	IV	IV	III	III	STW	STW	
11	June 15th, Wednesday	STW	IV	IV	STW	STW	STW	STW	
12	June 16th, Thursday	STW	STW	STW	STW	STW	STW	STW	
13	June 17th, Friday	SP	SP	SP	SP	SP	Farewell	Farewell	

Application and fees

- The course fee is 750 Euros. This fee covers lodging, meals, study material, and the field trip expenses. Travels to and from Granada is on the students own expense. Grants for CEIMAR Campus students will be available. Some additional funding may be available for other students. Please, indicate in your submission if you also are applying for a grant. In that case, attach the necessary documentation to justify it.

Venue and accommodation

- Granada Airport is located 16 kilometers from the city. There are car rentals, bus service (recommended) to Granada, and taxis. Domestic flights connect Granada with Madrid and Barcelona, among others. In order to reach Granada, we also recommend you to fly directly to Málaga. Málaga Airport is connected with many international destinations from all over the world. Málaga is the nearest international airport and is only 90 minutes from Granada by road. There are frequent

bus connections between Málaga Centre and Granada.

- The Summer School lectures will take place in the Andalusian Institute for Earth System Research (IISTA) (<https://www.google.com/maps/d/viewer?mid=z3iLA45RGYeA.keXDcyICnUEg&hl=en>), near the Genil river, and the Science Museum of Granada (Parque de las Ciencias), at 15 minutes walking from the city centre.
- Participants will be accommodated in the University Housings of the Carmen de la Victoria (<http://carmendelavictoria.ugr.es/?lang=en>). The Carmen de la Victoria, a delightful panoramic viewpoint of the Alhambra, full of gardens, is located in the moorish quarter of the Albayzín Hill.306 +

Contact

Any question related to this course? Please, contact us seagrass@ugr.es.
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3rd CEIMAR INTERNATIONAL SUMMER SCHOOL

June 5th - June 17th, 2016 Granada, Spain

Lecturers

Andrea D'Alpaos Sandro Longo Javier Ruiz
 Huib E. de Swart Gerd Masselink Henk Schuttelaars
 Manuel Díez-Minguito Miguel Ortega-Sánchez Arnoldo Valle- Levinson

Organizers

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