SEA-EU Module description

Module offer for the SEA-EU 'Virtual Modules'

Module/Course Name	**Introduction to Ocean Sustainability**	
Module/Course Code	mageoMACSUS (CAU Kiel)	
Field of Education	Generic programmes and qualifications	☐
	Education	☐
	Arts and humanities	☐
	Social sciences, journalism and information	☐
	Business, administration and law	☐
	Natural sciences, mathematics and statistics	☒
	Information and Communication Technologies	☐
	Engineering, manufacturing and construction	☐
	Agriculture, forestry, fisheries and veterinary	☐
	Health and welfare	☐
	Services	☐
Study programme	MSc Marine Geosciences	
Number of ECTS and total student workload	5 ECTS, and 150 hours total	
Contact hours and Independent study hours	15 x 2 hours contact hours (30 hours) independent study: 30 hours study (reading), 10 hours literature research, 10 hours online research (UN Conference), 70 hours for final report (policy brief), no written exam	
Typology of contact hours	30 hours in class: (incl. ca 1.5 h lecture and 0.5h discussion in group)	
Academic Year	2026	
Semester / Specific period	summer semester	
Teaching Language	English	
Delivery mode	hybrid	

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Responsible Lecturer	Name: Dr. Nina Keul E-Mail: nina.keul@ifg.uni-kiel.de
Other lecturers	there is 10 other lecturers (roughly one per session), to introduce the full scope of Ocean Sustainability
Learning outcomes	Students are able to describe the basic concepts of ocean sustainability. Furthermore, students will be familiar with innovative and solution-orientated opportunities for sustainability policy that reduces ocean pressures, enhance resilience and safeguards human prosperity derived from the ocean. Using this knowledge, students will be able to analyse sustainability related topics in an interdisciplinary setting, developing an important skill not only for academic careers, but also for engagement with societal actors and knowledge holders outside academia.
Course contents	The module will concentrate on integrated research areas that focus on the grand challenges faced in attaining ocean sustainability. Students will attend a lecture where lecturers of different SEA-EU universities will present current topics on ocean sustainability centering around Ocean Food, Ocean Floor Resources, Ocean Ethics, Ocean Disasters, The Law of the Seas, and “Blue Economy”. Students will further explore these topics within a seminar, where they will discuss sustainability topics with fellow students.
Prerequisites and/or recommended academic background	The key to future ocean sustainability lies in understanding the ocean and treating it as an integrated system with diverse social and natural interactions. Therefore, we target students from different marine disciplines: e.g. but not limited to: Marine Geosciences, Climate Physics or Biological Oceanography.
Assessment	Students are required to write a policy brief at the end of the lecture series. This is a key tool to present research and recommendations to a non-specialized audience. They serve as a vehicle for providing evidence-based policy advice to help readers make informed decisions.
Main bibliography	Individual reading material will be placed on learning platform at least 2 weeks prior to lecture. Here a few interesting materials from the last year: • IPCC Special Report 2018 Global Warming of 1.5°C • World Ocean Review 8 2024 The Ocean – A Climate Champion? How to Boost Marine Carbon Dioxide Uptake (WOR 8)

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- **6th Assessment Report 2021**

AR6 Climate Change 2021: The Physical Science Basis

- **World Ocean Review 7 2021**

The Ocean, Guarantor of Life – Sustainable Use, Effective Protection (WOR 7)

- **World Ocean Review 4 2015**

Sustainable Use of Our Oceans – Making Ideas Work (WOR 4)

- **UNCLOS**

UNCLOS: The United Nations Convention on the Law of the Sea, also called the Law of the Sea Convention or the Law of the Sea Treaty, is an international agreement that establishes a legal framework for all marine and maritime activities.

- **ITLOS Advisory Opinion on Climate Change**

On May 21, 2024, the International Tribunal for the Law of the Sea (ITLOS) delivered a long-awaited Advisory Opinion on climate change and international law. This marks the first time that an international tribunal has issued an advisory opinion on State obligations regarding climate change mitigation. The Advisory Opinion addresses several key questions regarding application of the United Nations Convention on the Law of the Sea (UNCLOS) in the context of climate change, including the interaction between UNCLOS and the global climate change regime, and the specific obligations of States to reduce climate-damaging greenhouse gas (GHG) emissions.

- **FAO Fish stocks**

Overview of the status of fishery ressources FYI: FAO has a huge database and many publications on fisheries, I am just posting the link above as a starting point, you need to explore a bit

- **Fish quotas**

and here a write up about the scientific fishing quota recommendation and what happens to it

- **Federal Government for a Carbon Management Strategy**

Germany aims to become one of the first major climate-neutral industrialised countries by 2045. The Federal Government has made considerable efforts in the last two years to this end, for example on the expansion of renewable energy, the decarbonisation of industry, the ramp-up of the hydrogen economy, the roll-out of e-mobility, the

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	strengthening of emissions trading, the acceleration of planning and approvals, and the heat transition in the buildings sector. The over- arching goal is the avoidance of emissions. Decarbonisation is and will remain at the heart of climate action, i.e. the phase-out not just of coal, but of fossil energy in general. • **GEOSTOR project** GEOSTOR aims to find prospective areas for CO2 storage and design a roadmap for the implementation of CO2 storage within the German North Sea

Organisational Information

Maximum number of SEA-EU participants
10
Learning Management System
OpenOlat
Course schedule (date and time)
The course is running 16.4. - 9.7.2026 Wednesdays 16:00-18:00 and Fridays, 12:00-14:00 CEST dates: 15.4., 17.4., 22.4., 29.4., 6.5., 8.5., 15.5., 20.5., 22.5., 3.6., 5.6., 10.6., 12.6., 19.6., 24.6. or 26.6.
Application deadline
10th March 2026

See the preliminary module schedule on the next page.
Please note that it may be subject to changes.

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Schedule

The module runs in summer semester at Kiel University (15 Apr-26 June 2026) with hybrid live sessions (i.e. on-site in Kiel with online participants from SEA-EU) on Wednesdays 16-18 CEST and Fridays 12-14 CEST (with a few exceptions). Please see the preliminary schedule below for exact dates, (SEA-EU) guest lecturers and topics.

Week date	topic	lecturer
Wed. 15.4.	Introduction to the course: objectives, content, expectations, Policy briefs intro	Dr. Nina Keul (CAU)
Fri. 17.4	Overview of sustainability	Dr. Nina Keul (CAU)
Wed. 22.4.	Finalise topics for Polic Briefs The trouble with negative emissions - we will create a policy brief in class	Dr. Nina Keul (CAU)
Fri. 24.4	The Theory of Sustainability: Introducing Core Elements of a Normative Concept	Video: JProf. Dr. Christian Baatz (CAU)
Wed. 29.4.	Marine Mineral Resources:	NK and GEOMAR colleagues, e.g. Dr. Sven Petersen e.g. Dr. Matthias Haeckel
Fri. 1.5	No class	
Wed 6.5.	corporate social responsibility	e.g. Carlo Limatola (U Parthenope)
Fri. 8.5	Law of the Sea: Governance of marine resources	e.g. Liv Christiansen (CAU)
Wed. 13.5.	No class	
Fri. 15.5.	11 a) Integrated coastal zone management and marine spatial planning (incl. marine protected areas) b) Sustainability in Aquaculture NK: discuss assignment: UN conference	e.g. Prof. Gorana Jelić Mrčelić (UNIST) Prof. Dr. Vedrana Nerlović (UNIST)
Wed. 20.5.	Topic tbd	
Fri. 22.5.	UN conference	Dr. Nina Keul (CAU)
Wed. 27.5.	no class (Exkursionswoche)	
Fri. 29.5.	no class (Exkursionswoche)	
Wed. 3.6	Sustainable Exploitation of Marine Living Resources I	e.g. Laura Sordo de Las Nieves (UAlg)
Fr 5.6.	Sustainable Exploitation of Marine Living Resources I	Dr. Nina Keul (CAU)
Wed. 10.6	Blue Economy: some basic concepts	e.g. Prof. Dr. Vincenzo Alfano (U Parthenope)
Fr 12.6.	Topic tbd	Dr. Nina Keul (CAU)
Wed. 17.6	No class	
Fr 19.6.	discuss structure of policy briefs	Dr. Nina Keul (CAU)
Wed. 24.6	last chance to ask questions	Dr. Nina Keul (CAU)
Fr 26.6.	on one of these days	Dr. Nina Keul (CAU)
Wed. 1.7.	no class: Alkor	
Fr. 3.7.	no class: Alkor	
Wed. 8.7.	no class: Alkor	
Fr. 10.7.	no class: Alkor	
1.8.	Deadline policy briefs	

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