



ISC 04 Sharks Uncovered: Science, Conservation and Knowledge

Day 1: Welcome and Introduction to Sharks and Elasmobranchs

- **9.00 Joint Opening Ceremony and Breakfast**
- **Welcome and Course Overview** (Reme Cabrera Castro)
 - Introduction to the course, objectives, and schedule.
- **10:00 - 11:00 What are Sharks and Elasmobranchs?** (Dr. Vicente Vieira Faria)
 - Overview of the shark species and the group Elasmobranchii.
 - Discussion on the different types of sharks, rays, and skates.
- **11:00 - 11:20 Break**
- **11:00 - 12:30 Evolutionary History of Sharks, Culture and Fishing** (Dr. Vicente Vieira Faria)
- **12:30 - 14:30 Anatomy of Elasmobranchs** (Dr. Carlos Rodríguez)
 - Study of general shark anatomy, including internal and external structures.

Day 2: Shark Physiology

- **9:00 - 11:00 Shark Physiology Overview** (Dra. Natascha Wosnick)
 - Introduction to the physiological systems of sharks, focusing on how their bodies function. How sharks feed, adaptations for hunting and the Understanding shark reproductive strategies.
- **11:00 - 11:20 Break**
- **11:20 - 13:00 Glaucostegus project: Biology and Conservation of Guitarfish in Spain** (Dr. Jaime Penadés).
- **13:00 - 14:30 The Role of Veterinary Professionals in Shark Research** (Dra. Carolina Maldonado)

Day 3: Research and Data Collection on Sharks

- **9:00 - 10:00 Research Methods and Data Collection** (Dr. Carlos Rodríguez)
 - Discussion on the different methods used to study sharks, including tracking, tagging, and observational studies
- **10:00 - 11:00 Social media and elasmobranch conservation - Curiosities and QsA** (Dr. Belquior Gonçalves)
- Interactive session for students to ask questions, share curiosities about sharks, and watch informative videos about sharks in the wild.
- **11:00 - 11:15 Break**

- 11:15 - 12:30 **Scientific Research** (Dr Belquior Gonçalves)
- Overview of significant research projects and the possibilities.
- 12:30 - 14:30 **Introduction to Data Organization and Management of fisheries data with R** (MSc. Ángel Domínguez-Bustos)
- This session will introduce students to the fundamentals of organizing and managing research data.

Day 4: Conservation

- 9:00 - 11:00 **Shark Conservation Efforts Worldwide** (Dra. Patricia Charvet)
- Examination of global shark conservation initiatives, including marine protected areas, fishing regulations, and advocacy.
- 11:00 - 11:20 Break
- 11:20 - 13:30 **Ecology and Temporal Analysis of Shark and Ray Catches** (Dr. Victor Sanz)
- This lecture will explore the ecological aspects of sharks and rays, focusing on their role in marine ecosystems. Additionally, it will cover methods for temporal analysis of catch data, including trends over time and the impact of fishing on populations.
- 13:30 - 14:30 **Open Session: Dissection or *in vivo* Observation** (Dr. Carlos Rodríguez)
- Final practical activity, which could involve a shark dissection or observing live sharks in an aquarium setting (depending on availability).

Day 5: New perspectives and Final Practical Session

- 9:00 - 10:00 **Sharks in Captivity: Aquarium Shark Husbandry** (Dr. Belquior Gonçalves)
- Discussion on maintaining sharks in aquariums, including care, feeding, and the ethical considerations of shark husbandry.
- 10:00 - 11:30 **Methods for Statistical Analysis of Sharks and Rays** (Dr. Victor Sanz)
- An introduction to statistical methods and tools used for analyzing data related to sharks and rays.
- 11:30 - 12:00 Break
- 12:00 - 14:00 **Practical Session: Data Analysis and Graphing with R** (MSc. Ángel Domínguez-Bustos)
- Hands-on session on data analysis. Students will work with real shark data sets to create graphs and analyze patterns using R.

Day 6 (Saturday): Visit to the Aquarium (Seville)

9:00 - 14:00