



CephRes - Cephalopod Biology and Care (CBC)

FELASA accredited course on cephalopods as laboratory animals

(FELASA 062/18F)

in compliance with Directive 2010/63/EU Functions: A, C, D

COURSE PLAN

(DOES NOT INCLUDE SESSIONS ON PRACTICAL TRAINING: DEMOS & SKILLS)

SESSIONS STARTING AT 12:00 CEST, UNLESS OTHERWISE STATED VIA E-LEARNING PLATFORMS' INVITATIONS
INCLUDES MAPPING TO MODULES

Day 1 – July 2, 2020

Short Intro to the course

Graziano Fiorito (IT; CBC Course Organizer and CBC Program Director)

The Directive 2010/63 and a comparative overview of National Legislations related to Cephalopods

David Anderson (UK)

Modules - Core: **1. National legislation; 2. Ethics, animal welfare and the Three Rs;**

Additional Tasks: **23. Advanced animal husbandry, care and enrichment practices**

Day 2 – July 3, 2020

The Directive 2010/63/EU: an interactive questionnaire

David Anderson (UK)

Modules - Core: **1. National legislation; 2. Ethics, animal welfare and the Three Rs;**

Additional Tasks: **23. Advanced animal husbandry, care and enrichment practices**

Day 3 – July 6, 2020

Ethics, the Three Rs and welfare considerations when using cephalopods

Jan-Bas Prins (UK & NL)

Modules - Core: **2. Ethics, animal welfare and the Three Rs;**

Function specific (A, C): **7. Minimally invasive procedures without anaesthesia – species specific (theory)**

Additional Tasks: **23. Advanced animal husbandry, care and enrichment practices**

Day 4 - July 7, 2020

Education & Training post implementation of Directive 2010/63/EU; requirements and needs for cephalopod 'workers'

Patri Vergara (ES)

Modules - Core: **1. National legislation; 2. Ethics, animal welfare and the Three Rs;**

Day 5 – July 8, 2020

Q&A: Ethics, the Three Rs and welfare considerations when using cephalopods

Jan-Bas Prins (UK & NL)

(* Seminar - (**) Group exercise/activity - (***) Additional Skills



Day 6 – July 9, 2020

Care and welfare of cephalopod egg masses^(*)

Roger Villanueva (ES)

Day 7 – July 10, 2020

Severity Assessment: Intro - CBC2020 Trainees exercise^(**)

David Anderson (UK)

Day 8 – July 11, 2020

CBC2020 Trainees - Exercise 1: monitoring animals^(**)

Day 9 – July 13, 2020

Cephalopod Biology: from form to function [*intro*]

Graziano Fiorito (IT)

CBC2020 Trainees: Exercise 1: monitoring animals^(**)

Day 10 – July 14, 2020

StoryTelling: Talk About Yourself & Ceph^(**)

CBC2020 Trainees (group 1)

Patri Vergara (ES)

David Smith (UK)

Marco Signore (IT)

G. Fiorito & G. Ponte (facilitators)

Day 11 – July 15, 2020

SESSION 1

Catching cephalopods for scientific purposes

Joao Pereira (PT)

Transporting cephalopods for scientific purposes

Joao Pereira (IT)

SESSION 2

Experimental Design and Power Analysis - part 1: introductory concepts^(***)

Antonella Iuliano (IT)

Day 12 – July 16, 2020

StoryTelling: Talk About Yourself & Ceph^(**)

CBC2020 Trainees (group 2)

Patri Vergara (ES)

David Smith (UK)

Marco Signore (IT)

G. Fiorito & G. Ponte (facilitators)

(*) Seminar - (**) Group exercise/activity - (***) Additional Skills



Day 13 – July 17, 2020

Cephalopod Biology: from form to function (species-specific intro: *Loligo vulgaris*)

CBC2020 Trainee M. Sprecher (CH)
Graziano Fiorito (IT; moderator)

Housing, Facility Management – general principles, as applied to cephalopods

Viola Galligioni (IE)

Day 14 – July 20, 2020

CBC2020: it is time to wrap-up (1st occasion)

CBC2020 Trainees
Graziano Fiorito (IT)

Animal care and culture of care: cephalopods our ‘special’ target

Viola Galligioni (IE)

Day 15 – July 21, 2020

Cephalopod Biology: from form to function (species-specific: *Loligo vulgaris* – a supplementum)

includes additional notes on care and welfare of animals

CBC2020 Trainee M. Sprecher (CH)
Graziano Fiorito (IT)

Day 16 – July 22, 2020

introduction to General and Local Anaesthesia

Giovanna Ponte (IT)

Administration of substances. Theoretical considerations of practical methods

Giovanna Ponte (IT)

Day 17 – July 23, 2020

Cephalopod Biology: from form to function (species-specific: *Euprymna species*)

CBC2020 Trainees: J. Jolly (Japan), M. Renard (DE)
Graziano Fiorito (IT; moderator)

Anaesthesia in aquatic species including cephalopods

Giovanna Ponte (IT)

Humanely killing cephalopods and confirmation of death

Giovanna Ponte (IT)

Day 18 – July 24, 2020

SESSION 1

Cephalopod Biology: from form to function (species-specific: *Sepia officinalis*)

CBC2020 Trainees: S. Bodenes (FR), F. Ménager (FR), C.M. Monni (IT), J. Pucher (DE)
Graziano Fiorito (IT; moderator)

(*) Seminar - (**) Group exercise/activity - (***) Additional Skills



Day 18 – July 24, 2020 - *continued*

Considerations for anaesthesia and humane killing of paralarval stages in cephalopods (*)

Fernando Á. Fernández-Álvarez (IE)

SESSION 2

Cephalopod Biology: from form to function (species-specific: *Octopus vulgaris*)

*CBC2020 Trainees: P. Bastos (BR), M. Cilli (IT), P. Imperadore (IT), L. Poncet (FR), W. Slany (AT)
Graziano Fiorito (IT; moderator)*

Day 19 – July 27, 2020

SESSION 1

Are cephalopods special? (genomically) (*)

Oleg Simakov (AT)

Recirculation aquaculture systems for cephalopods

Lars Juergens (DE)

SESSION 2

Vision and Presenting (***)

Marco Signore (IT)

Through the Eyes of an Octopus: Cognition and Consciousness in a marine invertebrate (*)

David Edelman (US)

Day 20 – July 28, 2020

Cephalopod Biology and Care: Activity Cycles

G. Fiorito (IT)

Animal Monitoring and Welfare assessment

G. Fiorito (IT)

Day 21 – July 29, 2020

SESSION 1

Experimental Design and Statistical Data Analysis - Part 2 Power Analysis (***)

Antonella Iuliano (IT)

Severity of Procedures – an overview

Viola Galligioni (IE)

SESSION 2

Recognition of pain, suffering and distress: the cephalopod case

Graziano Fiorito (IT)

Cephalopod Biology and Care: Feeding and Nutrition

G. Fiorito (IT)

(*) Seminar - (**) Group exercise/activity - (***) Additional Skills



Day 22 – July 30, 2020

CBC2020 Trainees: an outcome of the critical reading exercise *CBC2020 Trainee. J. Pucher 8DE)*
CBC2020 Trainees: working around project proposals for AWB

CBC2020 Trainees
Patri Vergara (ES)
David Smith (UK)
Marco Signore (IT)

Day 23 – July 31, 2020

Surfing around cephalopod Biology (and Physiology): From Biology to Procedures

G. Fiorito (IT)

Day 24 – August 1, 2020

Surfing around cephalopod Biology (and Physiology): Minimally Invasive Procedures

G. Fiorito (IT)

Health status and cephalopods diseases

G. Fiorito (IT)

Cephalopod Biology and care: how we care these animals - suggested mandate minima

G. Fiorito (IT)

End of the Course – live sessions
Dedicated wrap-up session is planned upon request

(*) Seminar - (**) Group exercise/activity - (***) Additional Skills



PRE-RECORDED SESSIONS

Experimental procedures under directive 2010/63/EU: Definitions, humane end points and planning.

this lecture will be available in the SharePoint as pre-recorded material

P.L.R. Andrews (UK)

Assessment of the severity of regulated procedures in cephalopods under Directive 2010/63/EU

this lecture will be available in the SharePoint as pre-recorded material

P.L.R. Andrews (UK)

Minimally invasive procedures: theoretical background

this lecture will be available in the SharePoint as pre-recorded material

P.L.R. Andrews (UK)

analogous material has been delivered by Dr G. Fiorito during the last day of the Course

Procedures, their planning and Humane Endpoints

this lecture will be available in the SharePoint as pre-recorded material

Viola Galligioni (IE)

Sensory biology, sound perception and influence of noise in cephalopods (*)

this seminar will be available in the SharePoint based on the presentation delivered during CBC2019 edition

Marta Solé (ES)

Experimental Design: an outline (*)

this lecture will be available in the SharePoint as pre-recorded material

Viola Galligioni (IE)

Basic principles of surgery for aquatic species; considerations to cephalopods

this lecture will be available in the SharePoint as pre-recorded material

Viola Galligioni (IE)

CBC Training Program is a **Function A/C/D course** according to the EU Directive 2010/63 (article 23.2), accredited by the **Federation of European Laboratory Animal Science Association (FELASA)**.

CBC is a CephRes project originated from the Cephalopod Biology and Care training school originally developed under the *aegis* of the COST Action FA1301. CephRes-CBC training program is the first and the sole course operating in Europe with FELASA accreditation, specifically and exclusively designed for the cephalopod molluscs in compliance with article 23 and Annex V of the Directive 2010/63/EU.

Cephalopod Biology and Care course provides theoretical and practical introduction to handling, housing, care and use of cephalopods as 'laboratory animals' and how to replace, refine and reduce the use of live cephalopods in research. It covers practical implications for research, including cephalopod biology, maintenance and care, capture, housing and handling, health and welfare management and assessment in any context, in compliance with Directive 2010/63/EU. CBC course is open to people who perform the functions, as stated in article 23 of the Directive 2010/63/EU: *carrying out procedures on animals, taking care of animals, killing animals*.

(*) Seminar - (**) Group exercise/activity - (***) Additional Skills