

Week 1	Time (h)	MODULE (EC)	Lectures / practicals / demonstrations	Group	Lecturer	Room
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Monday, 28 January 2019	08.45 - 09.00		Registration			A2.10
	09.00 - 09.30		LAS 2019 - Course Opening	A + B	Correia-Neves, M; Castelhamo-Carlos, MJ and Miranda, A	A2.10
	09.30 - 10.30	2	History of animal use, ethics and the 3Rs (part1)	A + B	Franco, N	A2.10
	10.45 - 12.00	2	A case of unethical treatment of laboratory animals	A + B	Castelhamo-Carlos, MJ	A2.10
	12.00 - 13.00	2	History of animal use, ethics and the 3Rs (part2)	A + B	Franco, N	A2.10
	LUNCH BREAK					
	14.00 - 15.30	2	Harm-benefit analysis, severity classification and culture of care	A + B	Franco, N	G2.02
	15.30 - 16.45	3.1 and 23	Basic biology of rodents	A + B	Miranda, A	G2.02
	17.00 - 18.00	9 and 11	Group tasks (introduction)	A + B	Correia-Neves, M; Castelhamo-Carlos, MJ and Miranda, A	G2.02

Tuesday, 29 January 2019	09.00 - 10.15	3.1 and 23	Good welfare - Good Science: the influence of husbandry and care on experimental outcome	A + B	Baumans, V/ Castelhamo-Carlos, MJ	G2.02
	10.30 - 11.45	7	Refinement of experimental procedures	A + B	Baumans, V/ Castelhamo-Carlos, MJ	G2.02
	11.45 - 13.00	4 and 23	Health status and animal facility barriers	A + B	Tavares, L.	G2.02
	LUNCH BREAK					
	14.00 - 15.00	4 and 23	Husbandry routines and animal welfare	A + B	Castelhamo-Carlos, MJ	G2.02
	15.00 - 16.00	4	Human health hazards and safe practices in the animal facilities	A + B	Castelhamo-Carlos, MJ	G2.02
	16.15 - 17.45	4 and 23	Health monitoring and diseases of lab animals	A + B	Miranda, A	G2.02
		5 and 23	Recognition of pain, suffering and distress		Miranda, A	G2.02
	17.45 - 19.00	11	Project preparation /selfstudy	A + B	Correia-Neves, M; Castelhamo-Carlos, MJ and Miranda, A	G2.02

Wednesday, 30 January 2019	09.00 - 10.00	4	Handling, restraint and identification	A + B	Castelhamo-Carlos, MJ	G2.02
	10.45 - 12.15	1 and 23	National Legislation	A + B	A.P. Martins	G2.02
	12.15 - 13.15	11	National and international legal issues	A + B	A.P. Martins	G2.02
	LUNCH BREAK					
	14.00 - 16.30	3.2	Handling rodents (practical)	A	Castelhamo-Carlos, MJ; Cunha, C; Miranda, A; Silva, J and Silva, S	Lab I2.04
		11	Project preparation /selfstudy	A + B	Correia-Neves, M	G2.02
	16.30 - 19.00	11	Project preparation /selfstudy	A + B	Correia-Neves, M	G2.02
		3.2	Handling rodents (practical)	B	Castelhamo-Carlos, MJ; Cunha, C; Miranda, A; Silva, J and Silva, S	Lab I2.04

Thursday, 31 January 2019	09.00 - 10.00	7	Minimally invasive procedures - administration of substances (theory)	A + B	Castelhamo-Carlos, MJ	G2.02
	10.15 - 11.00	8 and 22	Demo administration of substances and surgical instrument	B	Castelhamo-Carlos, MJ and Miranda, A	Lab I2.04
	11.00 - 13.00	11	Project preparation /selfstudy	A + B	Correia-Neves, M	G2.02
		8 and 22	Practical administration of substances, dosing and suture	B	Castelhamo-Carlos, MJ; Cunha, C; Miranda, A; Silva, J and Silva, S	Lab I2.04
	LUNCH BREAK					
	14.00 - 15.00	8 and 22	Demo administration of substances and surgical instruments	B	Miranda, A and Castelhamo-Carlos, MJ	Lab I2.04
	15.00 - 17.00	8 and 22	Practical administration of substances, dosing and suture	A	Castelhamo-Carlos, MJ; Cunha, C; Miranda, A; Silva, J and Silva, S	Lab I2.04
		11	Project preparation /selfstudy	A + B	Correia-Neves, M	G2.02
	17.00 - 19.00	11	Project preparation /selfstudy	A + B	Correia-Neves, M; Castelhamo-Carlos, MJ and Miranda, A	G2.02

Friday, 1 February 2019	09.00 - 10.30	10	Design of procedures and projects (level 1) - part I	A + B	Costa, P and Almeida, H	A2.08
	10.45 - 13.00	10	Design of procedures and projects (level 1) - part II	A + B	Costa, P and Almeida, H	A2.08
	LUNCH BREAK					
	14.00 - 15.00	7	Minimally invasive procedures - sampling of biological fluids and tissues (theory)	A + B	Castelhamo-Carlos, MJ	G2.02
	15.00 - 16.30	4 and 23	Breeding and management of genetically altered animals	A + B	Maciel, P	G2.02
	16.30 - 19.00	11	Project preparation /selfstudy	A + B	Correia-Neves, M; Castelhamo-Carlos, MJ and Miranda, A	G2.02

Week 2	Time (h)	MODULE (EC)	Lectures / practicals / demonstrations	Group	Lecturer	Room
Monday, 4 february 2019	09.00 - 10.30	20	Anaesthesia for minor procedures in rodents	A + B	Miranda, A	G2.02
	10.45 - 12.30	21	Advanced anaesthesia for surgical or prolonged procedures in rodents	A + B	Miranda, A	G2.02
	LUNCH BREAK					
	14.00 - 15.30	9	Ethics, animal welfare and the 3Rs (level 2)	A + B	Franco, N	G2.02
	15.30 - 18.00	6.2 and 8	Sampling (practical) and necropsy demonstration	A	Castelhano-Carlos, MJ; Cunha, C; Miranda, A; Silva, J and Silva, S	Lab I2.04
		11	Project preparation /selfstudy	A + B	Correia-Neves, M	G2.02
	18.00 - 19.00	11	Project preparation /selfstudy	A + B	Correia-Neves, M; Castelhano-Carlos, MJ and Miranda, A	G2.02
Tuesday, 5 february 2019	09.00 - 10.00	22	Principles and techniques of Surgery and Microsurgery	A + B	Castelhano-Carlos, MJ	G2.02
	10.15 - 12.45	6.2 and 8	Sampling (practical) and necropsy demonstration	A	Castelhano-Carlos, MJ; Cunha, C; Miranda, A; Silva, J and Silva, S	Lab I2.04
		11	Project preparation /selfstudy	B	Correia-Neves, M	G2.02
	LUNCH BREAK					
	14.00 - 15.00	11	Welfare assessment	A + B	Miranda, A	A2.08
	15.00 - 17.30	11	Study design and Statistics	A + B	Costa, P and Almeida, H	A2.08
	17.30 - 19.00	11	Project preparation /selfstudy	A + B	Correia-Neves, M; Castelhano-Carlos, MJ and Miranda, A	G2.02
Wednesday, 6 february 2019	09.00 - 10.30	11	Implementing the 3Rs and using alternatives	A + B	Castelhano-Carlos, MJ	G2.02
	10.45 - 11.45	6.1	Human methods of killing	A + B	Correia-Neves, M	G2.02
	11.45 - 12.45	11	GLP and the ARRIVE guidelines	A + B	Correia-Neves, M	G2.02
	LUNCH BREAK					
	14.00 - 15.00	23	Colony management and genetic drifting	A + B	de La Cueva Bueno, T (Charles River seminar)	A0.03
	15.00 - 19.00	11	Project preparation /selfstudy	A + B	Correia-Neves, M; Castelhano-Carlos, MJ and Miranda, A	G2.02
Thursday, 7 february 2019	09.00 - 10.00	11	Animal facilities Manual	A + B	Castelhano-Carlos, MJ	G2.02
	09.30 - 10.30	11	Project preparation/selfstudy	A	Correia-Neves, M; Castelhano-Carlos, MJ and Miranda, A	G2.02
		11	Visit to the Central Animal Facility	B		Animal Facilities
	10.45 - 11.00		Presentation of <i>SPCAL</i>	A + B	Castelhano-Carlos, MJ	G2.02
	11.00 - 12.30	11	Visit to the Central Animal Facility	A	Correia-Neves, M; Castelhano-Carlos, MJ and Miranda, A	Animal Facilities
		11	Project preparation/selfstudy	B		G2.02
	LUNCH BREAK					
	13.30 - 15.00		Preparation for examination	A + B		G2.02
	15.00 - 17.00		Examination	A + B		G2.02
17.15 - 19.00	11	Project preparation /selfstudy	A + B	Correia-Neves, M; Castelhano-Carlos, MJ and Miranda, A	G2.02	
Friday, 8 february 2019	09.00 - 12.15	11	Project preparation /selfstudy	A + B	Correia-Neves, M; Castelhano-Carlos, MJ and Miranda, A	G2.02
	LUNCH BREAK					
	13.30 - 17.00	11	Project presentation and discussion	A + B	Several lecturers and reserachers accredited for all functions according to article 31° of Portuguese Law (Decreto-Lei 113/2013 of 7th august) or article 23 of the Directive 2010/63/EU.	G2.02
	17.00 - 17.30		Course evaluation	A + B	Correia-Neves, M	G2.02

For the students enrolled in the MSc and PhD programs of the School of Medicine the course will have 4 additional weeks (from 11th February to 8th March).