Monday 3 September 2018 — Introduction, physics and data

Event	Lecturer	Time	Title
Lecture 1	Tessier	8:00	Introduction to the Monte Carlo method
Lecture 2	Townson	9:00	Looking inside EGSnrc
		9:30	Coffee
Lab 1	Tessier	9:45	Getting started: run your first EGSnrc application
		11:30	**Lunch**
Lecture 3	Mainegra-Hing	12:30	Photon physics and parameters
Lecture 4	Tessier	13:30	Electron physics and parameters
		14:30	Coffee
Lecture 5	Mainegra-Hing	14:45	PEGS4 data sets, pegsless mode and examin
Lab 2	Mainegra-Hing	15:30	Create and examine PEGS4 data sets
		17:00	End of session

Tuesday 4 September 2018 — BEAMnrc and variance reduction

Event	Lecturer	Time	Title
Lecture 6	Tessier	8:00	BEAMnrc introduction and main inputs
Lecture 7	Townson	9:00	BEAMnrc sources and component modules
		9:30	Coffee
Lab 3	Townson	9:45	Run BEAMnrc simulations
		11:30	**Lunch**
Lecture 8	Mainegra-Hing	12:30	Variance reduction in BEAMnrc
Lab 4	Mainegra-Hing	13:30	Investigate variance reduction in BEAMnrc
		14:30	Coffee
Lab 5	Townson	14:45	Create your own BEAMnrc accelerator
		16:00	End of session

Wednesday 5 September 2018 — Phase space files and DOSXYZnrc

Event	Lecturer	Time	Title
Lecture 9	Tessier	8:00	Phase space files
Lecture 10	Townson	9:00	Phase space file analysis with `beamdp`
		9:30	Coffee
Lab 6	Tessier	9:45	Analyze phase space files with `beamdp`
		11:30	**Lunch**
Lecture 11	Mainegra-Hing	12:30	DOSXYZnrc dose calculation in a phantom
Lecture 12	Townson	13:30	Dose analysis and visualization tools
		14:30	Coffee
Lab 7	Mainegra-Hing	14:45	Calculate dose in a phantom with DOSXYZnrc
		17:00	End of session

Thursday 6 September 2018 — DOSXYZnrc and egs++ introduction

Event	Lecturer	Time	Title
Lecture 13	Mainegra-Hing	8:00	DOSXYZnrc calculations with CT input
Lecture 14	Townson	8:30	Phase space sources and BEAMnrc shared library sources
		9:30	Coffee
Lab 8	Townson	9:45	Run advanced DOSXYZnrc simulations
		11:30	**Lunch**
Lecture 15	Tessier	12:30	Fundamental geometry definition: howfar() and hownear()
Lecture 16	Tessier	13:00	egs++: the EGSnrc C++ library and geometries
Lecture 17	Townson	14:00	egs++ particle sources
		14:30	Coffee
Lab 9	Tessier	14:45	Build an ionization chamber model in egs++
		17:00	End of session

Friday 7 September 2018 — egs++ applications

Event	Lecturer	Time	Title
Lecture 18	Mainegra-Hing	8:00	EGSnrc scoring and egs++ ausgab objects
Lecture 19	Tessier	8:30	egs++ applications and `egs_chamber`
		9:30	Coffee
Lab 10	Tessier	9:45	Variance reduction techniques with `egs_chamber`
		11:30	**Lunch**
Lecture 20	Mainegra-Hing	12:30	egs++ applications: `egs_fac` and `egs_cbct`
Lab 11	Mainegra-Hing	13:30	Model CBCT scans of a human head using `egs_cbct`
		14:30	Coffee
		14:45	Open lab time
		17:00	End of session