

## PHYS820/NTEC N11: Radiation Shielding Module

**TIMETABLE:** The lectures and practical sessions in the CTL Radiation laboratory

### Monday

10:00	Introduction to the course
10:30	<b>Lecture:</b> Radiological Protection Principles
11:15	<b>Lecture:</b> Introduction to Radiation Sensors
12:15	Lunch
13:30	<b>Lecture:</b> An introduction to MCNP & Validation (Andy Boston)
14:30	<b>Practical 0:</b> Practical introduction to MCNP
17:00	Finish

### Tuesday

09:15	<b>Lecture:</b> Monte Carlo Simulation (Andy Boston)
10:15	Break, discussion
10:45	<b>Practical:</b> MCNP simulation of detector rig
12:15	Lunch
13:30	<b>Practical:</b> MCNP simulation of detector rig
15:30	Break, discussion
16:00	<b>Practical:</b> MCNP simulation of detector rig
17:00	Finish

**Wednesday**

09:15	<b>Lecture:</b> Use of Monte Carlo Codes (Jacobs)
10:15	<b>Case Study:</b> Streaming (Jacobs)
10:45	Break, discussion
11:15	<b>Lecture:</b> Use of Deterministic Codes in Shielding (NNL)
12:15	Lunch
13:15	<b>Practical:</b> MCNP simulation of detector rig
15:45	Break, discussion
16:15	<b>Practical:</b> MCNP simulation of detector rig
17:00	Finish

**Thursday**

09:15	<b>Lecture:</b> The shielding design process (Cerberus Nuclear)
10:15	Break, discussion
10:45	<b>Practical:</b> MCNP simulation of detector rig
12:15	Lunch
13:15	<b>Lecture:</b> Shielding Applications (BAE Systems Submarines)
14:15	<b>Practical:</b> MCNP simulation of detector rig
15:30	Break, discussion
16:00	<b>Practical:</b> MCNP simulation of detector rig
17:00	Finish

**Friday**

**Practical:** Comparison of experiment and simulation complete as needed

09:15	<b>Practical:</b> MCNP simulation of detector rig
11:00	Break, discussion
11:30	Written test
12:30	Lunch
14:00	End of Course

*Practicals are labelled for information only; the order of completion may change.*