## MAP50005: Lattice Quantum Field Theory

Semester taught	Michaelmas Term
Module Coordinator	Mike Peardon and Stefan Sint
Credits	10 ECTS
Content	Introduction to discrete space-time formulations with an overview of the theoretical and computational tools, eg Monte Carlo simulations, used for quantitative study of quarks and gluons.
Learning Outcomes	<ul> <li>Construct a discrete lattice action for simple classical andquantum field theories. List the continuous and discrete symmetries and corresponding transformations of the fields.</li> <li>Analyse simple models for physical properties</li> <li>Derive Feynman rules on the lattice.</li> <li>Derive quantities including e.g. the free quark propagator on the lattice and its dependence on the lattice spacing.</li> <li>Program simple lattice problems and analyse the results.</li> </ul>
Assessment detail	50% continuously assessment and 50% online examination