## Special Topics in Physics

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## Contents

1 Lecture: Introduction 1

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Schedule

- $\bullet$  Week 2: Path Integral Methods in QFT Statistical Field Theory (Euclidean QFT)  ${\bf James}$  &  ${\bf I}$
- LeBellac Chap 8
- Week 3- 6: Renormalisation in QFT  $(\varphi^4)$  Achintya, James, Greg & I
- LeBellac Chap 5 & 6
- Assignment: Renormalisation of  $\frac{\lambda}{3!}\varphi^3$  in 6D (1 loop).
- Week 7-9: QED Scattering amplitudes.
- Week 10-13: Renormalisation of QED, SM and QFT on curved spacetime.