Semester II: 2017-18
To start on 3rd Jan 2018

Core courses (for all)
201 Math Methods, Numerical Methods, Research Methodology(CORE): Arun Nayak
214 Project

Optional Courses

202 Adv Cond Mat Phys : Saptarshi Mandal
203 Adv Nucl Phhys : P K Sahu
204 QFTII : Manimala Mitra
205 HEP : Kirtiman Ghosh
213 Spl Topics in Statistical Physics : S. Mukherji
(Title:Phase transition, renormalization and conformal field theory)

Details of 213:

Title:Phase transition, renormalization and conformal field theory

1. Simple lattice models, correlation functions, broken symmetry, critical exponents, mean field theory, Landau theory, renormalization group

2. Perturbative renormalization, beta functions etc (with examples from high energy physics)

3. Ising model, Jordan-Wigner transformation, scaling limit, free massless fermions

4. Conformal field theory (CFT) in d dimensions, Ward indentities etc, CFT in 2-d, minimal models.

Ref: For part 1, any stat mech book, for 2. Renormalization by Damiano Anselmi (http://renormalization.com/pdf/14B1.pdf), for 3. and 4. Ginsparg, https://arxiv.org/abs/hep-th/9108028; Henkel etc)
