

Introduction to Superconducting Radiofrequency

Course duration 30 hours over 10 week. 1 term

Outline:

In this class we will be going over the book RF Superconductivity by Padamsee, Hays and Knobloch. Students will work through the textbook by themselves. For each chapter exercises and questions will be provided beforehand. These will be discussed with the instructor on the whiteboard in weekly sessions. The sessions will be scheduled based on instructor and student availability. **This part of the assessment will account for 40% of the final mark.**

Students will choose a research project which which will include a literature research and a simulation or experimental component. **30% of the final mark will be given for a presentation on this project and 30% for a written report.**

TIMELINE:

Week 1 – Chapter 1 Introductory Overview + Discussion of Research Project

Week 2 – Chapter 2 Cavity Fundamentals and Cavity Fields

Week 3 – Chapter 3 Superconductivity Essentials

Week 4 – Chapter 4 Electrodynamics of normal and superconductors

Week 5 – Maximum Surface Fields

Week 6 and 7 – Two selected chapters from the book based on students' interest and chosen project.

Week 8 – Report on Progress on Research Project

Week 9 – Report on Progress on Research Project

Week 10 – Presentation of research project