

Topic 1 – Introduction to the course

Pre-Lecture Reading/Post-Lecture Summary

We will start with a survey of some things you know and some things that you might not know as well, with an eye towards seeing how it all fits together. We will consider classical vs. quantum and relativistic vs. non-relativistic mechanics. We will connect each with correspondence principles and uncover some unity through the use of Lagrangians. We will define what it is meant by “framework” and how this differs from a “theory” and what is meant by a “model”. Our discussion will include what it means to study a “particle” and what it means to study a “field”. We will do a cursory overview of the structure of the Standard Model, mainly as a skeleton of the details to be fleshed out in the remainder of the semester. We will end with motivation for and a rundown of the material we hope to cover in the course. Then you will leave and be happy.