

Material for Week 12

Physics 4488/6562: Statistical Mechanics

<https://sethna.lassp.cornell.edu/Teaching/562/>

Exercises due Mon. Apr 25

Last correction at January 11, 2022, 9:15 pm

©2021, James Sethna, all rights reserved

This Wednesday and next Monday we shall be making use of your tablets and laptops to do simulations. Bring them!

The exercises with numbers N1.xxx are to be found in <https://sethna.lassp.cornell.edu/StatMech/NewStatMechExercises.pdf>

Monday

In-class question: [11.1](#) *Maxwell and van der Waals*

Wednesday

Read: Chapter 11, Sec. 11.3 (Nucleation: critical droplet theory), and 11.4.1 (Coarsening)

Pre-class question: [11.12](#) *Nucleation in 2D*

In-class question: [11.6](#) *Coarsening in the Ising model*

Friday

Read: Chapter 11, Sec. 11.4 (Morphology of abrupt transitions)

Pre-class question: [11.8](#) *Minimizing sequences and microstructure*

In-class question: [11.7](#) *Origami microstructure*

Monday

Read: Chapter 12, Introduction

Pre-class question: [12.17](#) *The Gutenberg–Richter law*

Exercises for everyone (4488 and 6562)

[11.5](#) *Nucleation of dislocation pairs.*

[11.13](#) *Linear stability of a growing interface.*

Exercises for Graduate Course (6562 only)

[N1.7](#) *Where is the antimatter?.*

[N1.5](#) *Beer foam and coarsening.*