



Student Note Sheet

Fundamentals of Crystallography with Ansys Granta EduPack Software

Kaitlin Tyler

Ansys Academic Program

Edited by the Ansys Academic Program

education@ansys.com

Ansys Software Used

This resource set uses Ansys Granta EduPack™ teaching software for materials education.

Instructions

Use this document to guide note taking during lecture.

What is an example of an amorphous material you use in your daily life?

Which crystal system has the highest degree of symmetry? Which has the lowest?

Sketch one of the most common unit cells

Miller Indices: Labeling and Drawing Directions

Miller Indices: Labeling and Drawing Planes

What is the stacking for FCC? HCP?

What is an application for a single crystal material?

Definition of a crystal defect:

Name the four types of point defects. Which is the least common of the four? Why?

Sketch a dislocation

What is the difference between an extrinsic and intrinsic stacking fault?

What is Hall-Petch Strengthening?

© 2026 ANSYS, Inc. All rights reserved.

Use and Reproduction

The content used in this resource may only be used or reproduced for teaching purposes; and any commercial use is strictly prohibited. The full Academic Terms & Conditions can be found [using this link](#).

Document Information

This case study is part of a set of teaching resources to help introduce students to topics related to fluids.

Ansyes Education Resources

To access more undergraduate education resources, including lecture presentations with notes, exercises with worked solutions, microprojects, real life examples and more, visit www.ansys.com/education-resources.

Feedback

Here at Ansys, we rely on your feedback to ensure the educational content we create is up-to-date and fits your teaching needs.

[Please click the link here](#) out a short survey (~7 minutes) to help us continue to support academics around the world utilizing Ansys tools in the classroom.

ANSYS, Inc.
Southpointe
2600 Ansys Drive
Canonsburg, PA 15317
U.S.A.
724.746.3304
ansysinfo@ansys.com

If you've ever seen a rocket launch, flown on an airplane, driven a car, used a computer, touched a mobile device, crossed a bridge or put on wearable technology, chances are you've used a product where Ansys software played a critical role in its creation. Ansys is the global leader in engineering simulation. We help the world's most innovative companies deliver radically better products to their customers. By offering the best and broadest portfolio of engineering simulation software, we help them solve the most complex design challenges and engineer products limited only by imagination.

visit www.ansys.com for more information

Any and all ANSYS, Inc. brand, product, service and feature names, logos and slogans are registered trademarks or trademarks of ANSYS, Inc. or its subsidiaries in the United States or other countries. All other brand, product, service and feature names or trademarks are the property of their respective owners.

© 2026 ANSYS, Inc. All Rights Reserved.