# ALE3D Introductory Class Agenda

<table>
<thead>
<tr>
<th>PST</th>
<th>Mon (7/8)</th>
<th>Tue (7/9)</th>
<th>Wed (7/10)</th>
<th>Thu (7/11)</th>
<th>Fri (7/12)</th>
</tr>
</thead>
</table>
| 8:00 | ALE3D Code Capabilities  
File check - make sure everyone has notes and examples | Mesh Generation Part II - How to combine mesh objects into more complex geometries | Explicit Hydro - Multisphere Impact Example | Slide/Contact Surfaces - twosided and autocontact | Element Erosion - options for pure Lagrange Hydro simulations |
|      | BREAK AT 8:50                                                             | BREAK AT 8:50                                                             | BREAK AT 8:50                      | BREAK AT 8:50                                                             | BREAK AT 8:50                                                             |
| 9:00 | What is ALE  
Overview of ALE3D workflow  
How to run on Windows/Mac/Linux | Mesh Generation Part III – External Mesh Generation Options such as Cubit | HE Burn: Explosively Formed Projectile Example | Material Models - General theory and ALE3D material views | Smoothed Particle Hydro (SPHERAL) - How does this work, how to use it, how to do visualization of the results |
|      | BREAK AT 9:50                                                             | BREAK AT 9:50                                                             | BREAK AT 9:50                      | BREAK AT 10:00                                                           | BREAK AT 10:00                                                             |
| 10:00| Running ALE3D - Taylor Impact  
Mesh Generation Part I - How to create basic geometries like spheres, cylinders, and boxes | Shaping Material onto Background Mesh Part I - How to shape in basic geometries | Mesh Relaxation and Advection Part I - Basic Overview | BREAK at 10:00 | Embedded Grids Part I - FEusion implementation in ALE3D for meshes overlapping in space |
| 11:00| Mesh Generation Part I - How to create basic geometries like spheres, cylinders, and boxes | Shaping Material onto Background Mesh Part II - How to shape in more complex geometries | Mesh Relaxation and Advection Part II - More in-depth discussion on control options | Troubleshooting - how to understand why ALE3D crashed and how to recover | Embedded Grids Part II - Build an input file from scratch as a class, run it, debug it, and see how to visualize it |
|      | TWO HOUR BREAK - time to stretch, get sustenance, and test out some of those new skills | TWO HOUR BREAK - time to stretch, get sustenance, and test out some of those new skills | TWO HOUR BREAK - time to stretch, get sustenance, and test out some of those new skills | TWO HOUR BREAK - time to stretch, get sustenance, and test out some of those new skills | TWO HOUR BREAK - time to stretch, get sustenance, and test out some of those new skills |
| 12:00| VisIT tutorial  
Office Hours - get your questions answered by a developer | Office Hours - get your questions answered by a developer (1 on 1 if needed) | Office Hours - get your questions answered by a developer (1 on 1 if needed) | Office Hours - get your questions answered by a developer (1 on 1 if needed) | Questions?  
Please email the team at ale3d-help@llnl.gov |
| 2:00 | VisIT tutorial  
Office Hours - get your questions answered by a developer | Office Hours - get your questions answered by a developer (1 on 1 if needed) | Office Hours - get your questions answered by a developer (1 on 1 if needed) | Office Hours - get your questions answered by a developer (1 on 1 if needed) | Questions?  
Please email the team at ale3d-help@llnl.gov |

ALE3D Introductory Class Agenda
ALE3D Introductory Class Agenda

• Day 1 (Monday)
  • Hour 1
    • Section – Overview
    • Examples – N/A
  • Hour 2
    • Section – Tutorial
    • Examples – N/A
  • Hour 3
    • Section – Taylor Impact
    • Examples – ALE3D_Intro_Examples/Taylor_Impact_Example/tay2d.ain
  • Hour 4
    • Section – Mesh Generation
    • Examples
      • ALE3D_Intro_Examples/Mesh_Examples/Taylor_Mesh/taymesh.gin
      • ALE3D_Intro_Examples/Mesh_Examples/SpherePlate_Mesh/sphplatemesh.ain
      • ALE3D_Intro_Examples/Mesh_Examples/HE_Platter_Mesh/heplatter_1.ain
ALE3D Introductory Class Agenda

• Day 2 (Tuesday)
  • Hour 1
    • Section – Mesh Generation
    • Examples – ALE3D_Intro_Examples/Mesh_Examples/...
  • Hour 2
    • Section – External Mesh
    • Examples – N/A
  • Hour 3
    • Section – Shape Generation
    • Examples
      • ALE3D_Intro_Examples/Shape_Example/example1_dumbbell/exercise_dumbbell.ain
      • ALE3D_Intro_Examples/Shape_Example/example2_heplatter/exercise_heplatter.ain
  • Hour 4
    • Section – Shape Generation
    • Examples
      • ALE3D_Intro_Examples/Shape_Example/example3_bullet/exercise_bullet.ain
      • ALE3D_Intro_Examples/Shape_Example/example4_dice/exercise_dice.ain
Day 3 (Wednesday)

Hour 1
- Section – MultiSphere Impact
- Examples – ALE3D_Intro_Examples/MSphere_Impact_Example/msphere.ain

Hour 2
- Section – HE Platter
- Examples – ALE3D_Intro_Examples/HE_Platter_Example/heplatter_lag.ain

Hour 3
- Section – Advection
- Examples – ALE3D_Intro_Examples/Advection_Examples/advection.ain

Hour 4
- Section – Advection
- Examples – ALE3D_Intro_Examples/HE_Platter_Example/heplatter_ale.ain
ALE3D Introductory Class Agenda

• Day 4 (Thursday)
  • Hour 1
    • Section – Slides
    • Examples – ALE3D_Intro_Examples/Steven_Test/steven.in
  • Hour 2
    • Section – Material Models
    • Examples – N/A
  • Hour 3
    • Section – Matview
    • Examples – ALE3D_Intro_Examples/Matview_Example/
  • Hour 4
    • Section – Troubleshooting
    • Examples – N/A
ALE3D Introductory Class Agenda

• Day 5 (Friday)
  • Hour 1
    • Section – Erosion
    • Examples – ALE3D_Intro_Examples/Element_Erosion_SPH/erosion.ain
  • Hour 2
    • Section - SPH
    • Examples
      • ALE3D_Intro_Examples/Spheral/taylor_sph.ain
      • ALE3D_Intro_Examples/Spheral/ballplate_sph_2d.ain
      • ALE3D_Intro_Examples/Spheral/viper_sph.ain
      • ALE3D_Intro_Examples/Spheral/tp.ain
  • Hour 3
    • Section – Embedded Grids
    • Examples – Will be built in class
  • Hour 4
    • Section – Embedded Grids
    • Examples – Will be built in class