



ESP Training Overview

Rev 1.29+

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New User Training Sessions

Sessions held Monday through Wednesday

- U01 Introduction & Getting Started
- U02 Solids Fundamentals 1
- U03 CSM Language
- U04 Solids Fundamentals 2
- U05 UDPs, UDFs, and UDCs
- U06 Pyscript Fundamentals
- U07 Sketcher Fundamentals
- U08 Selection & Attribution
- U09 Sensitivities



Advanced User Training Sessions

Sessions held Thursday and Friday

- A01 Fitting STL models with PLUGS
- A02 Using MiniOpt for Packaging
- A03 Using OpenVSP Models in ESP
- A04 Advanced Surface Generation
- A05 Building Large Models
- A06 Using ESP Models in CAPS



Plugin Training Sessions

Sessions held Monday through Thursday

- P01 Plugin Overview
- P02 EGADS – Programmatic use of Geometry in the Plugins – 1/2
- P03 EGADS – Programmatic use of Geometry in the Plugins – 2/2
- P04 OpenCSM UDP Basics
- P05 OpenCSM Full-featured UDP
- P06 OpenCSM Full-featured UDF
- P07 CAPS' AIM Overview
- P08 AIM Software Structure
- P09 AIM Utility Functions & Tessellations
- P10 AIM Analysis Input, Execution and Output
- P11 AIM Sensitivities
- P12 AIMs and Units
- P13 Documenting AIMs
- P14 AIM Bounds & the AIM Discretization Structure
- P15 AIM Mesh Writing

	Mon 27jul	Tues 28jul	Wed 29jul	Thur 30jul	Fri 31jul
9:00	U01/P01	U04	U07	A01	A04
10:00	P02	P05	P08	P11	
11:00	U02	U05	U08	A02	A05
12:00	lunch	lunch	lunch	lunch	lunch
1:00	P03	P06	P09	P12	A06
2:00	U03	U06	U09	A03	
3:00	P04	P07	P10	P13	

- Each hour of lecture is followed by an hour for doing exercises
 - for example, the session at 9:00 is paired with time for exercises at 10:00
- 8:30–9:00 and 4:00–4:30 are additional times for exercises

- A laptop containing:
 - ESP Rev 1.29 (or a recent 1.30 Beta) from `http://acdl.mit.edu/ESP`
 - Download the training overlay:
 - `acdl.mit.edu/ESP/Training/trainings_2026.tgz`
or
`acdl.mit.edu/ESP/Training/trainings_2026.zip`
 - Should be expanded under `ESP129/EngSketchPad/` to make `ESP129/EngSketchPad/training/...`
 - Note any Downloads*.txt files
- A desire to build scripts for generating basic configurations in ESP

- Attended New User Training (or equivalent)
- A laptop containing:
 - An ESP recent Rev 1.30 Beta
from `http://acdl.mit.edu/ESP/archive`
 - Download the training overlay:
 - `acdl.mit.edu/ESP/Training/trainings-2026.tgz`
or
`acdl.mit.edu/ESP/Training/trainings-2026.zip`
 - **Should be expanded under ESP129/EngSketchPad/ to make ESP129/EngSketchPad/training/...**
 - Note any Downloads*.txt files
- A desire to build scripts for generating complex configurations in ESP

- Ability to program in C/C++
- A laptop containing:
 - C & C++ (and optionally FORTRAN) compilers
 - **doxygen** (for AIM documentation)
 - Linux: install from the Linux distribution
 - Windows: Download from www.doxygen.nl/downloads
Install
Add to the install point to PATH – can be done in a .bat file:


```
set PATH="C:\Program Files\doxygen\bin";%PATH%
```
 - MAC: Install from *homebrew* or www.doxygen.nl/downloads
Make sure the executable location is in your path
- ESP Rev 1.29 (or a recent 1.30 Beta)
 - From [HTTP://acd1.mit.edu/ESP](http://acd1.mit.edu/ESP)
Note any Downloads*.txt files
 - Either from the PreBuilt subdirectory –or–
 - From the archive subdirectory (for Betas) –or–
 - Build from source – [HTTP://acd1.mit.edu/ESP/ESP.tgz](http://acd1.mit.edu/ESP/ESP.tgz)

- A laptop containing:
 - If ESP is built from source:
 - OpenCASCADE 7.8.1
from `HTTP://acdl.mit.edu/ESP` or a PreBuilt distribution
 - A functioning Python at 3.12.10 or higher
If from `HTTP://acdl.mit.edu/ESP` – Run the install script and make this the default Python in the shell/command-prompt used for ESP development
 - ESP successfully built (and run)
 - Download the training overlay:
 - `acdl.mit.edu/ESP/Training/trainings_2026.tgz`
or
`acdl.mit.edu/ESP/Training/trainings_2026.zip`
 - Should be expanded under `ESP129/EngSketchPad/` to make `ESP129/EngSketchPad/training/...`
 - Note any `Downloads*.txt` files
- A desire to write an ESP UDF/UFD and/or an AIM
- An idea for plugin that you would like to work on