# Installation

## Installation Instructions

1. Installation of Rhino 7: [Rhino - Downloads (rhino3d.com)](https://www.rhino3d.com/download/)

Rhino is a CAD software, which is used for visualization, drawings and parametrizes geometry. Make sure it is Rhino 7 and not the newest Version Rhino 8. (Unfortunately, the free 90 Day test version only exists for Rhino 8). At IBK we have licenses that we will request for you with which you can use Rhino 7.

1. Install Ansys 2024: <https://itshop.ethz.ch/>

For DBAUG employees: You can download the Ansys Research 2024 version via the IT Shop of ETH.

For DBAUG students: You can download the Ansys Teaching 2024 version via the IT Shop of ETH.

(I am currently using Ansys Research 2022. However, I will also change to Research 2024 and change the source code so it also works with this version. Status: In progress)

1. Install Anaconda: [Free Download | Anaconda](https://www.anaconda.com/download)

This is a very convenient way of installing Python on your computer. Personal Tip: Make sure you don’t have any other python version on your device. This can sometimes lead to complications.

1. Install GitHub Desktop: <https://docs.github.com/en/desktop/installing-and-authenticating-to-github-desktop/installing-github-desktop>

This is a program to push and pull to GitHub repositories. You can also use equivalent programs or do it directly in the terminal. Login with your GitHub account.

1. Clone repository: <https://github.com/SophiaKuhn/StructuralEvaluationOfCFB>

Via GitHub Desktop you can clone our repository. Practise for working on the repository: Work always on a branch and not on main. Merge you changes from your branch to main only when your merge request got accepted. This helps to keep an overview over the changes within the repository and also allows working on the repository parallelly.

1. Install StrucEngLib: <https://strucenglib.ethz.ch/strucenglib_plugin/install_for_ansys/>

This is a Package for Rhino that was developed at the Chair of Concrete Structures and Bridge Design (by Dr. Marius Weber). Follow the installation instructions “Install for ansys” via the link.

( In case you need to make changes to the source code of the dependencies such as StrucEngLib or compas\_fea you should follow the developer installation instruction for the StrucEngLib [here](https://strucenglib.ethz.ch/strucenglib_plugin/developer/python_developer_mode/).)

1. Install CMMUsermat: <https://github.com/kfmResearch-NumericsTeam/CMM_Usermat/wiki/01-Getting-Started>

This enables the material Non-Linear FE-Analysis with Ansys. It was developed by Dr. Karel Thoma. Follow the instructions provided in the link.