# 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. There is a free 90 Day test version.

1. Install Ansys 2022: <https://itshop.ethz.ch/>

I am using the version Ansys Research 2022. However, the ETH IT shop only offers versions 2023 and 2024. Also for Students they do not offer the Research version but the Teaching Version is available. We therefore have to test it out with 2024, and if not find a solution how to use version 2022.

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 (Dr. Marius Weber). Follow the installation instructions “Install for ansys” via the link.

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

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