

**Abstract:**

The bachelor thesis deals with non-developable ruled surfaces, their theoretical description and procedures of creating physical models for educational purposes. The theoretical part is focused on definitions of basic concepts and classification of geometric surfaces. The non-developable ruled surfaces are represented with more detailed theoretical description by six sample surfaces of the second to fourth degree, i.e. one-sheeted hyperboloid, elliptic hyperboloid, hyperbolic paraboloid, Küpper's conoid, Plücker's conoid, and a right circular conoid. The practical part describes modeling of the sample surfaces from the theoretical part using the Rhinoceros 3D graphics software. Prepared models were converted by Slic3r PE into a 3D printer compatible input and printed out. Several illustrative physical models for education were created using this procedure.