



**ENG-SOLUTIONS**  
Engineering Solutions

# CERTIFICATE

no. «nr\_certyfikatu»

**OF COMPLETION**

Name and Surname

**«Imię\_NAZWISKO»**

Date and place of birth

**«Data\_i\_miejsce\_urodzenia\_EN»**

Name of training

**CNC Basic**

**Operating and programming numerically controlled machine**

(closed training)

Date **20-24/02/2017**

Instructor:

**M.Sc. Eng. Marek Krawczyk**



Director of CNC Training

**M.Sc. Eng. Marek Krawczyk**

Place and date of certificate issue:

**Bielsko-Biała, 24/02/2017**

The detailed training topics are given overleaf.

*Training topics:*

1. Reading of technical drafting, theory of machining, conventional machining, machining parameters, tools. Control system Siemens Sinumerik (828D, 840D)– analysis.	7 h
2. Theory of programming of CNC machines.	2 h
3. Programming of DIN/ISO CNC turning center – Sinumerik (810D, 828D, 840D).	4 h
4. Programming of DIN/ISO CNC milling machine center – Sinumerik (828D, 840D).	4 h
5. Programming of CNC turning center – ShopTurn - Sinumerik (828D, 840D).	4 h
6. Programming of CNC milling machine center – ShopMill - Sinumerik (828D, 840D).	4 h
7. CNC TOCK HTC-3000 turning center (Sinumerik 828D sl) – maintenance and programming DIN/ISO and ShopTurn.	10 h
8. CNC TOCK VMC-1000 milling machine center (Sinumerik 828D sl) – maintenance and programming DIN/ISO and ShopMill.	10 h
<i>Total:</i>	<i>45 h</i>