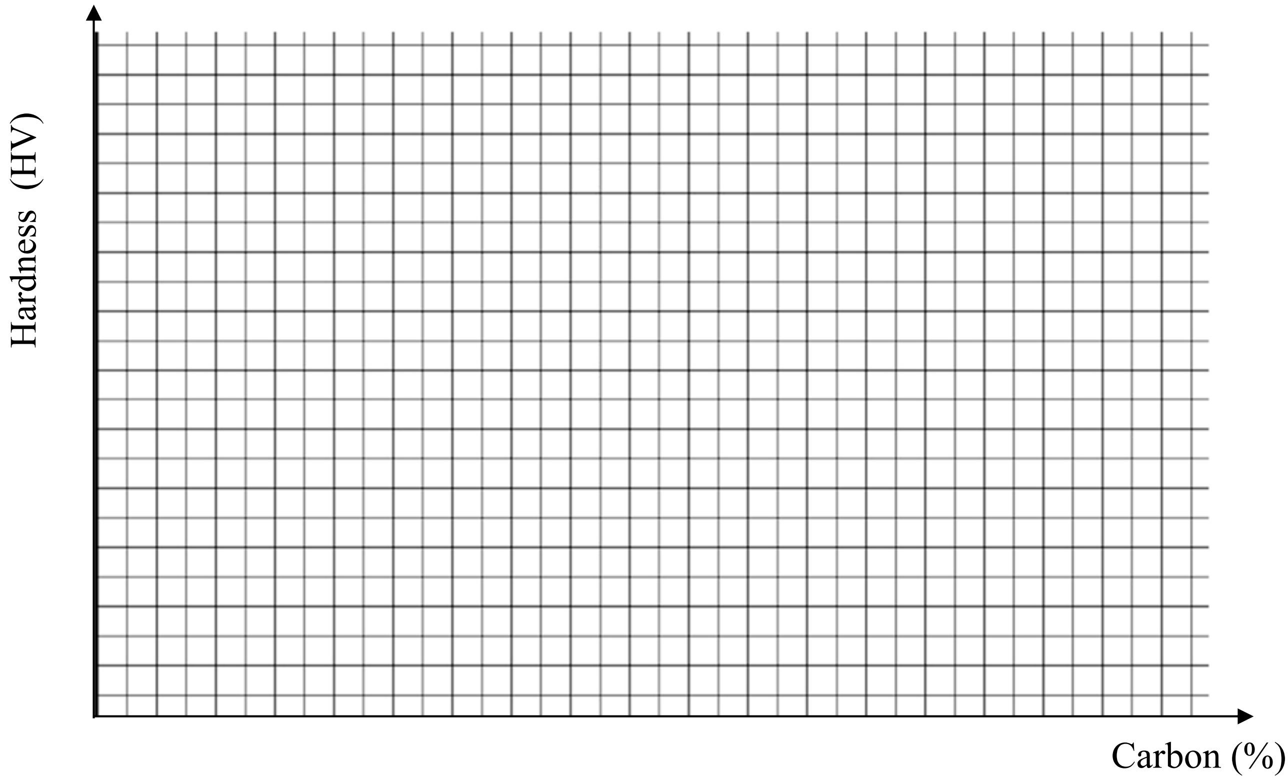
Heat treatment laboratory protocol

Name: Neptun: Lab group:

Nr.	Material	Heat treatment state	Hardness (HRB)	Hardness (HRC)	Hardness (HV)	Remark (bending angle)
1	**C15** **(C≈0.15%)**	*Annealed*: austenitized at 850°C for 20 min., cooled in furnace		---		
2		*Normalized*: austenitized at 850°C for 20 min., cooled in air		---		
3		*Quenched*: austenitized at 850°C for 20 min., cooled in water		---		
4	**C45** **(C≈0.45%)**	*Annealed*: austenitized at 850°C for 20 min., cooled in furnace		---		
5		*Normalized*: austenitized at 850°C for 20 min., cooled in air		---		
6		*Quenched*: austenitized at 850°C for 20 min., cooled in water	---			
7		*QT*: Quenched + tempered at 400°C for 20 min., cooled in air.	---			
8		*QT*: Quenched + tempered at 600°C for 20 min, cooled in air.	---			
9	**115CrV3** **(C≈1.1%)**	*Annealed*: austenitized at 850°C for 20 min., cooled in furnace		---		
10		*Normalized*: austenitized at 850°C for 20 min., cooled in air		---		
11		*Quenched*: austenitized at 850°C for 20 min., cooled in water.	---			
12		*QT*: Quenched + tempered at 400°C for 20 min., cooled in air.	---			
13		*QT*: Quenched + tempered at 600°C for 20 min., cooled in air.	---			

Hardness – carbon content – heat treatment state



Hardness – tempering temperature