Welcome to the course!

The name of this course is: Translations in metallurgy and mechanical engineering. The language of metallurgy and mechanical engineering is full of technical terms and unless you have worked in those fields, no previous experience could have prepared you for what is awaiting you in the following chapters. But please do not be discouraged by this fact, for this course is a very practical one. The aim is for the participant to understand the technology of steel making and its applications in mechanical engineering. Upon completing this course, you might find metallurgy and mechanical engineering interesting, fun, and worthy of further exploring. The knowledge gained in this course will enable you to immediately start translating for steel manufacturers, service centers or engineering companies.

How this course is organized

The course is organized in twelve units. Unit one is introductory. The following units (two to eleven) have a theoretical part devoted to understanding the metallurgical processes and mechanical engineering applications complemented throughout with practical exercises reflecting the discussed issues. At the end of units one through eleven, you will find points to remember and a glossary. The final unit (twelve) is a project. You will be asked to produce a translation of a technical text pertaining to metallurgy and mechanical engineering based upon which your overall performance will be evaluated and your final grade given.

Examples of exercises:

1st type:

Please select technical terms from the text below and translate them:

Mechanical Properties

The mechanical properties describe how steel grades behave when subjected to a mechanical load. They are listed in all specifications. The mechanical properties are strongly affected by the chemical composition and the microstructure.

Mechanical properties change with temperature and environmental conditions. Consequently, the conditions during the test must always be mentioned when

reporting mechanical properties. The most important mechanical properties are: yield point, tensile strength, elongation, hardness, toughness, fatigue, etc.

2nd type:

Fill in the gaps:

Steel is produced from iron **ore** and **scrap**.

There are two main processes for producing steel: by means of a **blast furnace** (indirect reduction) in combination with a converter, or by means of an **electric** furnace. In the former process, iron ore is the main **raw** material. In an **electric** furnace, **scrap** iron is used and occasionally also **sponge** iron. **Sponge** iron is an intermediate product, which is produced from iron **ore** by means of direct reduction (DRI or directly reduced iron) and then further reduced and **smelted** in an **electric** furnace.

3rd type:

Translate the following into Czech:

Shipbuilding

The shipbuilding market consumes significant amounts of steel plates. Shipyards use plate steel for production of bulk carriers, barges and container and cruise ships. In the United States, most steel made for ship construction is specified by the American Bureau of Shipping (ABS).

4th type:

Use external resources for the following answers:

1. Find a Czech testing laboratory on the internet, where you can have any steel properties examined.

5th type:

Translate into Czech:

Hydrogen

Hydrochloric acid

Sulphuric acid

6th type:

1) What is a "coking plant"? What is produced there and what are the byproducts? (use both Czech and English terminology)

Points to remember:

- The name of this course is: Translations in metallurgy and mechanical engineering.
- The course is organized in twelve units: 1: introductory, 2-6 theory and exercises, 12: project
- Points to remember and a glossary at the end of units 1-11
- Various types of practical exercises

Glossary:

English	Czech
Blast furnace	Vysoká pec
Elongation	Prodloužení
Glossary	Slovníček
Iron ore	Železná ruda
Matallurgy	Matalurgie (hutnictví)
Mechanical engineering	Strojírenství
Mechanical properties	Mechanické vlastnosti
Scrap iron	Šrot (odpadní železo)
Shipyard	Loděnice
Smelting	Tavení
Sponge iron	Houbovité železo
Tensile strength	Pevnost v tahu
Yield point	Mez kluzu (průtažnosti)