

Goals

The overall aims of the course are:

- To develop students' knowledge of current methods to produce base metals from natural ores and recycled materials with focus on steel, which are most relevant for the Swedish steel industry. However, the production of aluminum and silicon is also discussed to exemplify the production other metal as well as other production concepts.
- To develop students' individual skills at performing relevant thermodynamic calculations for the extraction of base metals with focus on steel.
- To develop students' individual skills at interpreting the significance of the results of these calculations.

Teachers: Pär Jönsson, parj@kth.se
Andrey Karasev, karasev@kth.se

Assistants: Joar Huss, joarh@kth.se – recitations, exercises
Tova Jarnerud, jarnerud@kth.se – steel university lab
Björn Ahlin, bjoahl@kth.se - steel university lab

Course requirements: Exam (TEN1), 4 p.
Home assignment (ÖVN1: 2p) Computer lab steel production, participation and written report.

Literature: Chapters on ironmaking, steelmaking, ladle refining, aluminum and silicon production are available on the canvas system. In addition, handouts will be given out in connection to the lectures.

Period: 1

Exam: October 21, 8.00-13.00, K53

Student office, ITM
Brinellvägen 68
100 44 Stockholm

Phone: 08-7908200
e-mail: expnord@itm.kth.se

Lecture schedule

26/8	13.15-15.00	L31	Course introduction Blast furnace metallurgy	– Andrey Karasev
29/8	08.15-10.00	L31	Recitation, exercises	- Joar Huss
2/9	13.15-15.00	Rinman	Electric arc furnace metallurgy	– Andrey Karasev
5/9	08.15-10.00	L31	Recitation, exercises	- Joar Huss
9/9	13.15-15.00	U31	Sulfur removal from iron Converter metallurgy –	– Andrey Karasev
12/9	08.15-10.00	L31	Recitation, exercises	- Joar Huss
17/9	13.15-15.00	Rinman	Ladle metallurgy	- Andrey Karasev
19/9	08.15-10.00	L31	Ladle metallurgy + casting	– Andrey Karasev
23/9	13.15-15.00	Rinman	Recitation, exercises	- Joar Huss
26/9	08.15-10.00	L31	Recitation, exercises	- Joar Huss
30/9	13.15-17.00	M122	Computer laboration “Steel University”	- Tova Jarnerud - Björn Ahlin
3/10	08.15-10.00	L31	Production of aluminium and silicon	- Andrey Karasev
4/10	10.15-12.00	Rinman	Recitation, exercises	- Joar Huss
7/10	13.15-15.00	L31	Recitation, exercises	- Joar Huss
9/10	08.15-10.00	L31	Summary. Example of exam	- Andrey Karasev
21/10	08.00-13.00	K53	Examination	