COURSE SYLLABUS

Analysis of Casting Defects, 3 credits

Gjutfelsanalys, 3 högskolepoäng

Course Code:	TGAS22	**Education Cycle:**	Second-cycle level
Confirmed by:	Dean Mar 1, 2022	**Disciplinary domain:**	Technology (95%) and social sciences (5%)
Valid From:	Aug 1, 2022	**Subject group:**	MA2
Version:	1	**Specialised in:**	A1F
		Main field of study:	Product Development

Intended Learning Outcomes (ILO)

After a successful course the student shall:

Knowledge and understanding

• display knowledge of how the casting defects are identified and characterized

• display knowledge of how the casting defects can be minimized or eliminated, and how simulation tools can be used in that work

Skills and abilities

• demonstrate skills of identifying casting defects and derive causes of defect formation

• demonstrate skills of applying and combining different analytical methods including casting simulation for defect characterization and elimination

Judgement and approach

• demonstrate the ability to make a proper defect assessment and critically evaluate the causes and mechanisms underlying the defect formation

Contents

The course covers the most common casting defects, how they are identified and characterized, causes of their formations, the basic mechanisms and measures to minimize or eliminate their occurrence.

The course includes the following elements:
- Identification of different types of casting defects
- Defect formation - Causes and mechanisms
- Prediction of defects using simulation tools
- Practical examinations
- Root cause analysis
- Case studies

Type of instruction

Lectures, seminars, project work, laboratory activities and exercises.

The teaching is conducted in English.

Prerequisites

Passed courses at least 90 credits within the major subject Mechanical Engineering, 15 credits Mathematics, and completed course in Solidification Processing, 3 credits and proof of English proficiency is required (or the equivalent).

Examination and grades

The course is graded 5,4,3 or Fail.

Registration of examination:

Name of the Test	Value	Grading
Examination[I]	2 credits	5/4/3/U
Exercises and Project Worik	1 credit	U/G

[I] Determines the final grade of the course, which is issued only when all course units have been passed.

Course literature

Literature

The literature list for the course will be provided eight weeks before the course starts.