1 Name, Scope and Level of the Course
The course is provided by the University of Skövde and is named Metrology for Technicians G1F. It comprises 6 credits and is on basic level. The level of progression of the course is G1F.

2 Objectives
After completed course the student should be able to:

Knowledge and understanding
- account for the SI system and its relation to calibration and traceability,
- account for commonly used equipment for mechanical measurements, for example, micrometer and gauge blocks,
- account for electrical measurement of non-electrical quantities, for example, temperature, speed, position, surface roughness and position,

Proficiency and Ability
- in a structured way use some measuring instruments which frequently appear in the industry,

Ability to Evaluate and Relate
- reflect on how the accuracy of measurement is affected by external environmental factors and
- for a given situation, reflect on advantages and disadvantage with different kinds of measurement methods.

3 Course Content
In order to make measurements and present a measurement results, knowledge about different measuring instruments and their properties is required. The measurement results are affected by environmental conditions such as e.g. temperatures and vibrations. In many cases, sampling and measurement constitute a quality assurance of the manufacturing process.

The course focuses on measurement methods and sensors used in the manufacturing industry. The course deals with electrical measurement of non-electrical quantities; Examples of this are thermocouples for measuring temperature or differential transformer for measuring location. Traditional mechanical measurement methods, such as indicator gauges, micrometers and gauge blocks, are also discussed in the course.

In addition to this, the course includes majorities and units, especially the SI-system, how the accuracy of the metering is determined by traceable calibration, and how measurement uncertainty and possible sources of error affect the measurement result.

4 Forms of Teaching
The teaching comprises lectures and laboratory sessions. Compulsory attendance at the laboratory.

The teaching is conducted in Swedish. Some teaching in English may occur.
5 Examination
The course is graded VG (Pass with distinction), G (Pass) or U (Fail).

Registration of examination results:

<table>
<thead>
<tr>
<th>Name of examination</th>
<th>Credits</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervised written examination</td>
<td>4 credits</td>
<td>VG/G/U</td>
</tr>
<tr>
<td>Written assignment</td>
<td>2 credits</td>
<td>G/U</td>
</tr>
</tbody>
</table>

¹ Determines the final grade of the course.

Students with a permanent disability who have been approved for special educational support may be offered adapted or alternative examinations.

6 Admission Requirements
Prerequisite courses for this course are: Courses: MA102G-Mathematics T G1N and FY102G-Physics for Technicians 1 G1N (or the equivalent).

7 Subject, Main Field of Study and Disciplinary Domain
The course forms a part of the academic subject area of Mechanical Engineering. The course is a part of the main field of study in Mechanical Engineering at the University of Skövde. The course can also be a part of the main field of study in Industrial Engineering. The disciplinary domain of the course is Technology.

Every course at the University of Skövde belongs to a subject. The division of subjects is used for follow-up and quality assurance. A main field of study is an area in which a degree can be awarded. Disciplinary domain is a division which is used by the government for the allocation of resources for studies at basic level and advanced level.

8 Approval of Course and Course Syllabus
The course was approved by the Curriculum Committee for Engineering Science on 5 February 2018. This course syllabus was approved by the Curriculum Committee for Engineering Science on 5 February 2018. It is valid from 1 July 2018.

9 Overlapping with Another Course
This course cannot constitute a part of a degree also containing a course the content of which is totally or partly equivalent to the content of this course, e.g. Quality and Measurement Technology G1N 3 credits Quality and Measurement Technology G1F 7.5 credits

10 Additional Information
Further information will be available on the university's website before a course is given.

National and local regulations for higher education are available on the university’s website.

Upon completion of the course there will be a follow-up. The main purpose of this follow-up is to contribute to improvements of the course. The students’ experiences and views constitute one of the criteria for the follow-up and are gathered by means of course evaluations. The students will be informed of the results of the follow-up and any decisions regarding actions that are to be taken.

11 Course Literature and Other Educational Materials

Reference literature
