

Practical Study of Precision Machining

Syllabus Number

1F301

Basic Major Subjects

Requisites 2 credit

ISOGAI, Takeshi

1. Course Description

Machine shop practice 1 I have the accuracy inspecting method, the machining method, the electric processing method, heat treatment method, etc. mastered through experience of an actual.

Moreover, I have the method of the automatic fabrication by the machining center or NC mastered through experience of an actual.

It is indispensable to report collectively the contents furthermore performed by training.

2. Course Objectives

1. We experience the mensuration of various time intervals and let you understand the measurement accuracy.

2. We perform the metal processing using a typical working lathe in the cutting method, and let you understand a lathe-turning fabrication.

3. We perform the metal processing using a typical milling machine in the cutting method, and let you understand the milling-cutter processing method.

4. We have the processing method by NC program experienced using NC milling machine.

5. We let you understand the principle of the form engraving electrical discharge machining which is one of the electrical-discharge-machining methods.

6. We have it experienced by heat-treating steel that the mechanical strength of material makes it improve.

7. We let you understand the machining center of 3 axes of coincidences regulation, a selective of the method of the automatic fabrication by CAD/CAM, and a tool, an it1 of a fabrication stage of execution works, and selection of the optimal processing conditions.

You learn the knowhow and skill about DP3, DP4, and DP5 in this lesson.

3. Grading Policy

Based on a machining-operation laboratory work document, I will have training, and ask for presentation of a report every theme.

I consider it as results by valuation of a participating attitude including the positivizes to the study under training, the recognition which receives safely, etc., and the contents of the submitted report.

I give a demerit mark sharply to lateness and absence.

I do not use the object of a valuation, even if it submits only a report without being present.

During session, in order to grasp an old lesson and the degree of comprehension of the contents of training to there, I ask suitably and evaluate.

About a question, I answer altogether including a question.

I include these questions and answers in a valuation of a lesson attitude.

4. Textbook and Reference

Textbook

The Teikyo University department-of-science-and-engineering machinery and precise systems-engineering family "Machining-operation laboratory work document"

Reference

The teacher of Department of Mechanical and Precision System Machining-operation laboratory work document The Teikyo University department of science and engineering machinery and precise systems engineering family

5. Requirements(Assignments)

After a correction It is required to certainly attend a time [1st] machine-shop-practice guidance, and to receive the attention about a security. Please be sure to take notes about important notes and to observe by future lessons in this guidance. Moreover, if the lesson about fabrications, such as precision-machining study, or an it1 is studied, I will become easy to understand the contents of training. Before a lesson, please read the specified textbook and summarize the contents and the metal cutting machine tool to be used of a training theme. Please also summarize a relationship with the contents of a lesson about fabrications, such as precision-machining study, or an it1. (About 1 hour) After training should create a report about the contents of training, and the theme concerned according to an indication of the teacher in charge. (About 2 hours)

6. Note

Anyone may get injured if six metal cutting machine tools are treated carelessly.

In fabrication training of a dangerous working lathe and a general purpose milling machine, I obtain guidance to each teacher of Masanori Takano, Inoue, Makoto Shinohara, Yasuyuki Uetake, and Akira Uchiyama who is an altitude technician especially.

7. Schedule

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| [1] | Guidance |
| [2] | Measurement 1 |
| [3] | Measurement 2 |
| [4] | Lathe 1 |
| [5] | Lathe 2 |

- [6] Milling machine 1
- [7] Milling machine 2
- [8] NC Milling machine 1
- [9] NC Milling machine 2
- [10] Electrical discharge machining 1
- [11] Electrical discharge machining 2
- [12] Heat treatment 1
- [13] Heat treatment 2
- [14] Machining centre 1
- [15] Machining centre 2