COURSE DESCRIPTION CARD - SYLLABUS

Course name
Product Quality Planning

Course

Field of study
Product Lifecycle Engineering
Area of study (specialization)
-
Level of study
Second-cycle studies
Form of study
full-time

Year/Semester
1/1
Profile of study
general academic
Course offered in
English
Requirements
compulsory

Number of hours

Lecture
15
Laboratory classes
15
Other (e.g. online)
Tutorials
Projects/seminars

Number of credit points

2

Lecturers

Responsible for the course/lecturer:
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Responsible for the course/lecturer:

Prerequisites

Knowledge of issues in the field of quality management, knowledge of the basics of project management. Student has IT skills - knowledge of MS Office. The student has the skills of logical thinking, the use of information obtained from the library and the Internet. Social competences - the student understands the need to learn and acquire new knowledge; can work in a team; recognizes the

possibilities of continuous improvement in various areas of life, including the activities of organizations, with particular emphasis on manufacturing enterprises.

Course objective

To familiarize the student with the methodology of advanced product quality planning - APQP. To familiarize the student with the methods of measurement and control system analysis - MSA.

Course-related learning outcomes

Knowledge

Student knows the stages of the APQP methodology and PPAP actions. The student knows the process FMEA method. The student knows what a control plan is. The student knows the basic methods of measurement system analysis.

Skills

The student knows how to develop APQP project documentation - 18 elements of PPAP.

The student knows how to develop a "quality trilogy" for a selected product and process - Process Flow Chart, pFMEA, Control Plan.

The student knows how to choose the MSA method for the control and measurement system, knows how to plan the MSA study, conduct it and analyze and interpret the results.

Social competences

The student is aware of the effects of engineering activities in both technical and non-technical areas. The student is aware of the effects of decisions and responsibility for decisions.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Formulation assessment:

Lecture – Evaluation based on answers to questions about the material discussed in the previous lectures.

Project – Evaluation based on assessment of current progress of tasks

Summary assessment:

Lecture – Examination on the basis of a colloquium consisting of 8 general questions (credit in the case of a correct answer to at least 4 questions (each question for 1 point): 3 points and less – Not credited, 4 - Satisfactory, 5 – Satisfactory plus, 6 - Good, 7 – Good plus and 8 – Very good. Credit – during the last lecture (at the end of the semester). Discussion the results of the exam.

Laboratory exercises: performing problem tasks, solving tasks, discussion, working in a team.

Programme content

Lecture:

1. AIAG Core Tools – guidebooks.

2. Stages of APQP methodology.

3. APQP trilogy (Process Flow-Chart, FMEA and CP).

4. Part Approval Process (PPAP).

5. APQP and PPAP documentation.

6. Measurement system analysis (MSA). ARM and KAPPA methods. Computer support in conducting MSA analyzes (MS Excel, Statistica, Minitab)

7. Practical guidelines for conducting APQP projects in the company.

Laboratory:

Development of selected elements of APQP project documentation (APQP trilogy).

Teaching methods

Lecture: multimedia presentation illustrated with examples given on the board, discussion.

Laboratory exercises: performing problem tasks, solving tasks, discussion, working in a team.

Bibliography

Basic

1. Advanced Product Quality Planning And Control Plan, 2nd ed., Reference manual, AIAG-Work Group, Daimler Chrysler Corporation, Ford Motor Company, General Motors Corporation, 2008.

2. Measurement System Analysis, 4th ed., Reference manual, AIAG-Work Group, Daimler Chrysler Corporation, Ford Motor Company, General Motors Corporation, 2010.

Additional

1. AIAG & VDA FMEA Handbook, 2019.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam) [1]	20	1,0

1 delete or add other activities as appropriate